ATHLETIC JOURNAL

Vol. XVII, No. 3 November, 1936

Coaching End Play
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Noble Kizer

The Fast-Break Offense in Basketball
W. H. Browne

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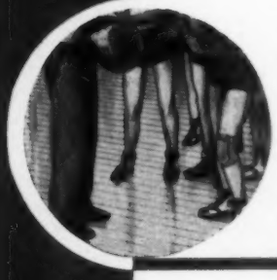

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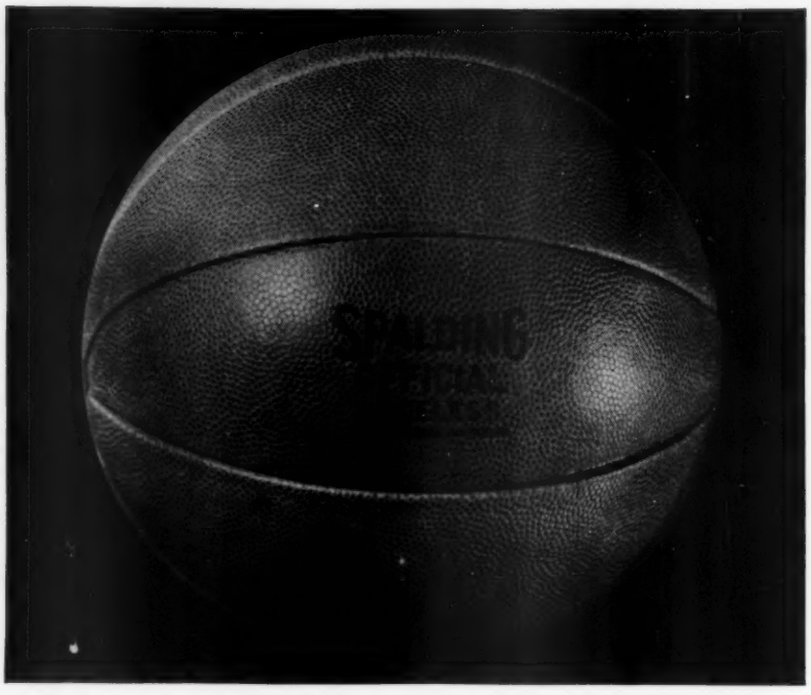

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IT PAYS TO PLAY

IT'S LACELESS—FOR BETTER BASKETBALL!

A touchdown pass in the hands of Loebs, Purdue University end, in a game with the State University of Iowa.

Coaching End Play

By Ben Connor
De Paul University

ONE might discuss the essentials of end play for days, and still not exhaust the subject. The duties of the end are more varied than those of any other man on the football team, and thus necessitate more thorough coaching and polishing off.

Though the ends are not so important on defense as the tackles, nevertheless two strong defensive ends are essential for bottling up the offense. In other words, a football team could struggle along with a pair of ordinary defensive ends, but would be immensely weakened if the tackles were not up to par.

Offensive Play on the Line

On offense, the end must be careful of his stance, equalizing his weight so as to have the correct balance, leaning not too far forward, in which case his charge would be downward, nor too far back on his heels, where he would be helpless to get the jump in blocking. His legs must be well spread, his feet pointing straight ahead and his head up.

A very important exercise to develop the feet and legs of an end and to give him the necessary spring in his legs is to have him hang by his arms from some object above his head, rising on tiptoes and then lowering himself back to the balls of his feet at least twenty times each day. Eventually, because of this exercise, the man will feel as comfortable when he is taking his stance as he would if he were standing upright.

An end must always try to outsmart the opposing tackle, varying his blocks so as to keep the tackle guessing and trying by head fakes to mislead the tackle in the use of his hands. I think too many coaches overlook the importance of the head fake. A majority of our defensive tackles, even though we try to correct this fault, unconsciously follow the fake of the opposing end's head with their hands, thus leaving themselves open for contact on the opposite side of the body.

An end must never tip off to the tackle by movement what he intends to do. Once he has done so, he has lost 70 per cent of his efficiency. The first move in boxing the tackle must be fast enough to allow the end to get in contact with the tackle's body. As the end knows which block or charge he is going to use, his first move should be faster than that of the tackle.

The end must strike a happy medium as to the height at which he hits the tackle. If his charge carries him too low, either he will drive into the ground or the tackle will reach over him. If he is too high, he loses all possibility of any drive. His head must be up, his back square and his legs wide apart. Short, digging, driving steps must be employed to root the tackle out. The end's shoulder should be driven into the belt line of the opponent so that when the end raises his body he feels the weight of the tackle's body directly down on his shoulder. Only then has he contacted correctly.

It is obvious that the tail of the end must be kept low and swung to the side toward which the man carrying the ball is going; to accomplish this, the end's outside leg must be used like a flail.

An end has use of perhaps a dozen different blocks, and it is essential that he know how and when to use them. He may have three different ways to handle a tackle on a particular play, but he must study the tackle so that he may know which type of block will work best on a particular man, and naturally he must have the play in mind. If one block does not work on a particular tackle, the end should, on the next play, employ another type of block or charge.

In the accompanying illustrations you will note four distinct movements employed by the end in each block or charge. The original stance is not fully illustrated.

Pass Offense

The end's part in pass offense is most important. Before going out for a pass, he must not change his stance in any way, lest

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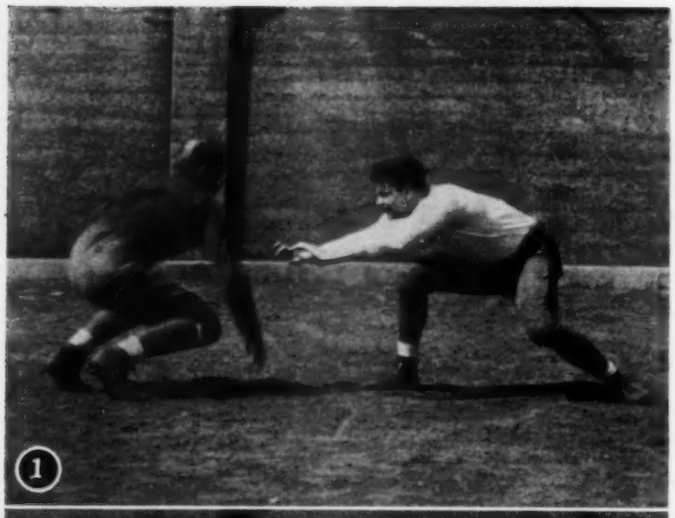
AT the University of Notre Dame, Ben Connor played under a former star end, one of the greatest of football's many good coaches, Knute Rockne. For the past five years, he has coached the line at De Paul University. Before joining the coaching staff of this Chicago institution, he spent one year at Campion College and five years at St. Ignatius High School. He describes in this article the individual play of the end on both offense and defense. In the November, 1935, issue of this publication, he outlined the play of the guards under the Notre Dame system.



Reverse Body Block by Right End

Illustration 1—The end (dark jersey) is about to take his initial step into the tackle with his inside leg, having already faked the tackle toward the outside with his head. Play shown in these illustrations is that of the end on the right side of the line.

Illustration 2—The end is taking the initial step toward the tackle. His left arm is raised and his body is high, as though he intended to use a straight standing block.

Illustration 3—The end is bringing his left arm down and across the tackle's stiff arms, which carries him down and into the man. The flail movement of the left leg is just starting around to catch the tackle behind his knee.

Illustration 4—The end has completed the reverse body block. Note the spread of the legs and also the position of the left leg. If the flail leg is swung hard enough, the defensive man will be unable to stay upright. This block is usually employed by the end on the weak side of the line.

Shoulder Block by Right End, Taking Tackle In

Illustration 5—The right end is about to drive the opposing tackle in with a shoulder charge. It will be noted that the end already has the tackle at his mercy because the tackle's body and arms are aimed toward the inside; the end took his first or fake step toward the inside of the tackle, thus drawing the tackle in. (This movement was not caught by the camera.)

Illustration 6—The end is bringing his body outside and up into the tackle, at the same time swinging around the outside or flail leg. (Note the position of the end's head.)

Illustration 7—The end has contact and is preparing to raise his shoulders. (Note that his tail is a little too high and that his right leg should flank the tackle a little more than it does in this illustration.)

Illustration 8—The completion of the shoulder charge is shown in this picture. The tackle is well flanked. The weight of the tackle is directly on the shoulders of the end.

Shoulder Block by Right End, Taking Tackle Out

Illustration 9—The right end has started to take the tackle out. The one fault with this block is that the end has committed the cardinal sin of having his head down. This illustration shows the first step with the outside foot.

Illustration 10—The end is starting to bring his left leg around.

Illustration 11—The end's upward drive is shown in this illustration.

Illustration 12—The finish of the charge and the start of the leg drive are illustrated here.

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he tip off the tackle as to his intention. He must always be threatening the tackle as though he were about to block him. He must not tighten up in going out, but must run relaxed, so that he may employ a change of pace and a fast change of direction.

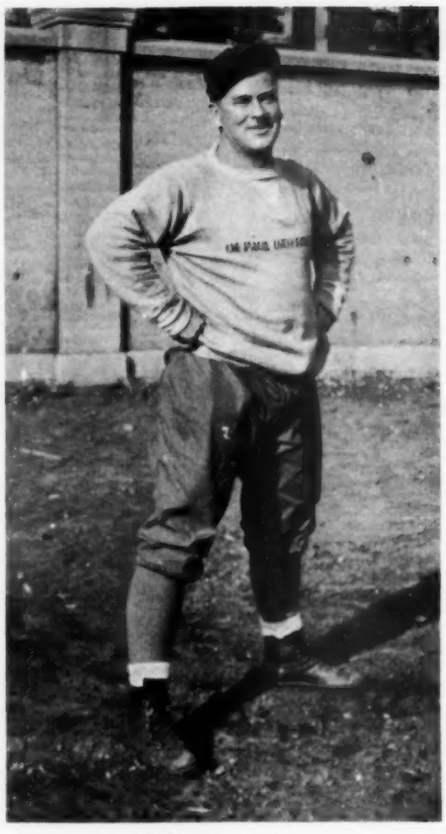
In catching the pass, he must be relaxed, keeping his fingers spread. He should cushion the ball, as outfielders do on a fly ball, using his hands and arms only. He must not fight the ball, but take it in stride. An end who fights the ball and tightens up will never be a good pass receiver.

Defensive Play on the Line

On defense, unless the end is crashing, he should go in as far as possible and as quickly as he can without committing himself. He should be on his toes and in a crouched position. His hands should be well out in front of his body. He should go in at an angle so that the ball-carrier cannot circle him and so that also he will be in position to swing his tail into the ball-carrier if the latter cuts inside.

It is essential for the end to have his inside leg forward so that, if he has to drift toward the side lines with the ball-carrier, his inside leg can be thrown over the outside leg, thus leaving no tangible object for the blockers to contact and eliminating the dangers of being boxed in. The blockers should never be allowed to get at the end's legs.

The end should never concentrate on the interference. Split vision should be employed, enabling the end to see the blockers out of the corner of his eye while concentrating on the ball-carrier. The end must



Ben Connor

not give ground unless compelled to do so. Too many ends are content to drift with the runner toward the side lines, whereas if they were to drive in and make contact they might slow up the play enough for one of the other defensive men to make the tackle before the run gets under way. The end must always have in mind the tactical situation, keep his head up all the time, trying to figure out the next play.

It is essential that the end keep in touch with his nearest tackle and his backs so that they can work together. By changing his tactics, the end can make it difficult for the offense to know just what he is going to do on each play.

A crashing end must drive in with abandon, throwing his body full length across the legs of the mass interference, thus cleaning up the interference for the tackle and backs.

Play on Punt Formations

When going down under punts, the end should run as swiftly as possible, using a change of pace and employing his hands to elude prospective blockers. He must not be faked by the receiver, as the latter may try to deceive the end as to the path of the ball. As the end hears the thud of the ball, he should turn his head to get the direction of its flight. When he approaches the receiver, about five yards away, he should slow down a little and spread his legs. He should fake with the receiver, so as not to be thrown off balance.

When on defense against punts, the end should go in quickly with his arms in front of him to ward off blockers. He must be sure to have the kicker flanked, unless he has prearranged with his tackle for the latter to cover the outside.

In conclusion, I may say that the ideal end is one who possesses these qualities: weight, height, strong legs, big hands, shiftiness, balance, speed and mental poise.

The above are general points on end play. How the ends should play against different offenses is a matter of opinion.

Are We Burning Them Up?

By Edward J. Storey
Mamaroneck, New York, Public Schools

ARE we burning them up, coaches? Are we burning up more energy in the bodies of our athletes than they can afford to spare?

Our athletic training procedures have been assailed before on the grounds of unintelligent training methods, and many athletic failures have been credited to these same methods. We must protect the health of the growing boy. We must protect him from having his energies burned up in the heat of athletic competition. My great interest is in the scholastic athlete, although the college man comes in the same category. No sport can be singled out to point the finger at as one that burns up its participants more quickly than other sports. However, the results of this burning up process are more evident in track than in other athletics because it is an individual sport. Are we burning up stars in our interscholastic track competion? I think we are.

***SHORTLY** after graduating from the University of New Hampshire in 1922, Edward J. Storey went to Newfoundland as an electrical engineer. Returning to the United States, he became coach of all athletics at Powder Point School for Boys, Duxbury, Massachusetts. Following successful years of coaching athletics at Shippensburg and Collingdale, Pennsylvania, he took graduate work in physical education at Temple University. For the past ten years he has been at Mamaroneck High School as Director of Health and Physical Education. During this time, he has done graduate work at Columbia University and has completed requirements for a master's degree at New York University. He has also studied at Bellevue Hospital, New York, and has done research in nutrition. He is now working on his doctorate.*

Causes of Staleness

Every time a favorite fails to win an important race when the time is not so good as that he is usually credited with, you may depend upon it that he went stale from burning up. Of course, no coach can keep sports free of all of the emotional disturbances that an adolescent will experience during a given season; so we will have to allow for a few upsets resulting from psychological causes.

It is my belief that most staleness is caused by this burning up process. By "burning up" I mean using up more energy than the body has available during a given period of time. Out of my research and study, I have learned that an ordinary track man cannot afford to

vary more than two pounds from his normal weight. I will define the normal weight as that weight at which the athlete looks best and performs best. The clock is the best measure. The average track man is lean and of the lanky type; so obviously he can carry little extra weight. It is my belief that most cases of staleness caused by burning up result from lack of knowledge rather than the desire of any coach to profit by a particular boy's ability to break records. Inaccurate weight records have been kept, or the boy has been allowed to train himself and no attention has been paid to his weight or his diet.

Chemical Insufficiency

The great majority of athletes go stale from chemical insufficiency. There used to be a theory that staleness was caused by some sort of heart failure, but heart specialists agree that a normal heart cannot be harmed by exercise.

What chemicals are necessary to keep the body going? Of course, all of the items in a balanced diet are necessary and certain additions to make up for the additional energy demands of practice periods and competition. Tests have been made of the blood sugars of men at the end of Marathon races, and the winners all have a high blood sugar test while the losers have a low blood sugar test. This lack of blood sugar we would logically believe is the result of living on a diet low in sugar. The old trainers used to believe in eliminating sugar from the training diet. We should have learned from lessons taught during the World War. Every German soldier was given salt and sugar after a long march. Sugar was fed to the German contestants in the Winter Olympics and was fed again last summer to the German Olympic athletes at Berlin.

How can we check the condition of our competitors from day to day without resorting to difficult blood chemistries and technical tests? Weight is one of the most important records to keep. Since most of the loss during exercise is water, this loss should be completely recovered by the next day. If the boy is losing weight, he is using up more energy than he is taking in. Check up on his daily training program.

Regulating Condition

We are using three ways of checking physical condition: the Roger's Physical Capacity Test, grip tests and the McCurdy Jump Tests. By comparing records of these tests from day to day and week to week, we have some fairly accurate methods of checking the physical condition of the boy. We keep an accurate record of the weight of every boy every day as he goes out on the field and when he comes in.

Sleep and diet seem to be the two most important factors in regulating condition. Loss of sleep will show in all of the tests and will affect the weight as much as two pounds. Of course, diet is important in regulating the healthy development of adolescent boys.

What is the best diet for the young athlete? For adolescent boys, the diet must contain, first, all the material necessary for growth and, second, extra quick energy food. We are all familiar with the balanced diet, which contains minerals and vitamins, fats, proteins, carbohydrates and roughage. If a diet is set up to provide for normal growth, then certain additions will have to be made to give the

Edward J. Storey

boy energy for his athletic work. It seems to be logical in the light of recent scientific research to make up this deficiency with carbohydrates.

The energy of muscular work is derived mainly from the carbohydrates. The most efficient diet for the athlete then is one high in carbohydrates. It has been found that dextrose is one of the most efficient foods in the carbohydrate family. It has also been found that the feeding of this sugar just before races has delayed the onset of fatigue and that the boys using it have improved their performances. We are suggesting that all of our athletes in training use dextrose in place of sugar and eat a dextrose candy in place of their usual candy choice. None of the old time trainers will agree, but Dr. Gordon's work in Boston proves the efficacy of the dextrose additions to the diet. The work done on Boston Marathon runners showed that the candy eaters were the least tired and had the highest tests in blood sugars. If you wish the most efficient diet for young athletes, add to the balanced diet special additions of simple carbohydrates or dextrose.

Alkalinity and Endurance

Endurance is determined by the alkaline reserve of the body. This alkaline reserve is built up largely through diet. A trained muscle will more easily take care of the lactic acid produced in exercise than an untrained muscle. If the track coach wishes his pupils to develop the highest degree of endurance, he should help them to choose those foods which oxidize with an alkaline ash in order not to deplete the normal alkalinity of the body with acid ash products.

Fats interfere most with the development of alkalinity in the body. The oxidation of fats always results in an acid ash. We ask our boys to eliminate all cream, meats of nuts, peanut butter and oils, and to hold themselves to one pat of butter each meal during their athletic life. This necessary endurance cannot be developed in a few weeks, or a few months. At least six months are required to affect materially the hydrogenion concentration of the blood. If you have distance men who want to be in shape for spring track, start their dieting now.

If you want to use a good endurance test, I suggest the die-off test which Dr. Thomas Cureton uses in his prediction of swimming performance. It is easy to administer, and the results will be valuable to you in your appraisal of the abilities of your athletes, whether they are track or football or basketball men.

Preventing Staleness

A physiologist has said, "As your mineral content, so is your health," and we cannot miss the significance of the meaning of this warning. It is tremendously important to keep the body fully protected with the necessary minerals. Calcium, sodium, phosphorus and potassium are the important buffers of the blood and help the blood stream maintain its alkalinity.

Excessive perspiration eliminates a great deal of sodium and potassium from the blood. The sodium may be easily replaced by using more salt at meal time. Every man in training should expect to use more salt than in ordinary life. Sometimes a deficiency in calcium will cause track men to tie up easily. If you have such a man, check up on his intake of milk, cheese, orange juice or ice cream. We ask each track man to drink at least one quart of milk during the day before the race and none at lunch on the day of the race. Consider the minerals, for they make your athletes go.

It is my belief that staleness can be prevented by adhering to five simple suggestions:

1. Have a careful medical examination of your young athletes by a physician at the start of the season. This examination should include an examination of the heart at rest and at work (after a race against time).

2. Regularly make a careful check of the athletes' physical condition with some standard test.

3. Keep a careful weight record to the

tenth of a pound, along with a workout record.

4. Educate men in specific dietary measures for each sport. Emphasize the importance of maintaining weight.

5. Provide extra and easily available energy in the form of dextrose for certain boys a half hour before each contest. (The Germans have perfected the use of this and have a product known as Dextro-Energen.)

Proof of the Pudding

It is fallacious to assume that by merely exercising an individual you can increase his strength. The facts do not prove this point. Records taken during sport seasons have proved that some coaching regimes actually deprive individuals of strength. Knowing these facts, I carefully checked our records to see what happened to our track men during the first half of the season of 1936. Here are the results I discovered.

The records show that every man on the squad increased in strength. The range of gain was from 4 to 14 per cent in strength index on the Roger's Physical Capacity Test. After attaining the normal weight for each boy, we were able to maintain it. We have found that a small variation from this normal is disastrous to some boys. In the case of one sprinter who runs the 220-yard dash well under 23 seconds, the loss of a pound will increase his time by five-tenths of a second at this distance.

Every boy on our squad gained in grip and push-ups during this four week period. The grip seems to vary in the same proportion as the whole physical capacity test. Losses of sleep and weight from day to day are reflected in a loss of grip. We have found that week-end dances and late parties are a source of great loss of weight. Our records show losses of as much as three pounds over a week-end without any athletic activity.

Do you know whether your track men are gaining or losing strength during the

(Continued on page 43)

The Importance of Good Offensive Blocking

By Noble Kizer
Purdue University

OFFENSIVE blocking is the most important part of offensive football. A strong blocking team should win if ten men block on every play. Blocking, good sound blocking, is needed on kicks, passes and runs if plays are to be successful.

Because of the fact that offensive blocking is unnatural to football beginners, it is necessary that they learn a few simple fundamentals. Offensive blocking is not difficult to learn if the object of blocking is explained so that the player knows what he is doing and why.

The Need for Blocking

It is obvious that blocking is used to help and protect ball-carrier, passer and kicker. It is often necessary through offensive blocking to move defensive men to make paths for the ball-carrier. At other times it is necessary just to stop the progress of defensive men.

A few years ago, there were many different terminologies used in referring to blocking. Coaches at summer schools were using "five dollar words," and no one knew what they meant. It is much easier to teach blocking if the player is instructed in terms of blocking with the part of the body or legs he uses than if unusual terms are employed.

Types of Blocks

Four or five blocks are all that are necessary to have a good blocking team, and all eleven men can use the same blocks, regardless of their positions. Along with the pictures that accompany this article are explanations of the shoulder block, the high body block, the reverse body block, the delayed block and the two-on-one block.

LIKE the early season football games, the spectacular November contests will be won with good blocking and the efficient performance of other fundamentals. Sparkling trick plays will win the attention of the football fans in the important contests, but the thoughtful football coach knows that it is hard and accurate blocking that makes the trick plays successful. Early November is an excellent time for the coach to check up on the way in which his players perform the fundamentals. In this article, Noble Kizer discusses offensive blocking. The success of the Purdue University teams under his supervision is too well known to require mention.

The stance of the blocker is important. It should be the same at all times, regardless of the kind of block to be used. A comfortable stance is necessary if the player is to have blocking control. The player's feet must be wide apart, his back must be arched, his head should be up, and he should have a bull neck. A blocker starts from this stance and when he gets contact he should still have the same stance.

The Uses of Various Blocks

The shoulder block is used more often than other types of blocks, as it is the moving block. When it is necessary to open a path for a man, the shoulder block is used, as with it the blocker has the power to move a defensive player.

A high body block is generally used to stop the progress of a defensive player for two counts or more. A reverse body block is used on a man when his speed is too great for a body block. A delayed block is used for a delay of one or two counts.

Shoulder Drive

Illustration 1—Note the stance of the blocker (the man on the left): his head is up, his back is arched, his feet and knees are wide apart, his heels and toes are parallel and his weight is slightly supported on the knuckles of his hand.

Illustration 2—After the blocker has assumed the proper stance, he uncoils or lunges at the defensive player, aiming to hit him just above the knee with the front part of his shoulder. Note that his head is up and his feet are wide apart before he makes contact with the defensive player.

Illustration 3—In this picture, the offensive blocker has made a practically perfect contact. His feet have recovered fast on the uncoil and are set wide apart. His tail is low, his head is up and his hands are drawn toward his abdomen.

Illustration 4—After he has made the contact, the blocker begins to drive, with his feet wide apart and his head up. He uses a short choppy step in taking out the defensive man.

High Body Block

Illustration 5—In this picture, the offensive blocker (the man on the left) has raised his head, faking to the left to get the defensive man to raise his hands and play the offensive blocker's head.

Illustration 6—The offensive blocker suddenly turns his head to the right, going under the defensive player's hands.

Illustration 7—The offensive blocker has partially gone into a shoulder block to prevent the defensive player from coming through fast.

Illustration 8—The offensive blocker slides off the defensive guard's hip and goes into a high body block. Note the position after he has made the contact. The offensive man keeps his body close to the defensive man so that he does not lose contact. Also, he keeps the defensive man between his hips and neck so that he can follow the defensive player in either direction, back or forward.

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Reverse Block

Illustration 9—The offensive guard (the man on the left) has pulled out to take the defensive end out. He is going into the end as though he were making a shoulder drive.

Illustration 10—The offensive guard is faking to the left, going under the defensive end's hands and bringing his head close to the end's body.

Illustration 11—In this picture the offensive guard has completed the fake and is pivoting on the inside foot, the left foot, and turning or whipping his hip into the defensive end.

Illustration 12—The reverse block has been completed. However, the right foot of the blocker must be on the ground to make the drive more effective. Note the position the offensive guard has taken. He is driving high on both hands and feet.

Delayed Block

Illustration 13—The offensive player (the man on the left) is very carefully watching the movements of the defensive man and is ready to move in any direction taken by the defensive man.

Illustration 14—The offensive player has dropped his right foot back slightly in order to meet the defensive man, who has started moving to his right. Note that he has started to raise his body.

Illustration 15—The offensive blocker has made a good fake at the defensive man, has gone under his hands and is ready to make a shoulder block.

Illustration 16—The offensive blocker has made the contact and is keeping in front of the defensive man by raising his body.

Two-on-One Block

Illustration 17—This picture shows the stance taken by two offensive linemen working on one defensive man when the defensive man is playing in the hole.

Illustration 18—The left offensive lineman starts as though he were going to make a shoulder drive. This is to prevent the defensive man from coming through. Then the left offensive lineman slides down below the knees of the defensive man. The right offensive lineman fakes to the right in order to get a clear opening from the side of the defensive man. However, the fake must be carried out fast or he will lose contact with the defensive man.

Illustration 19—The right offensive man has assumed good contact and starts driving. The left offensive man begins to retreat.

Illustration 20—The right offensive man has driven the defensive man over the left offensive man.

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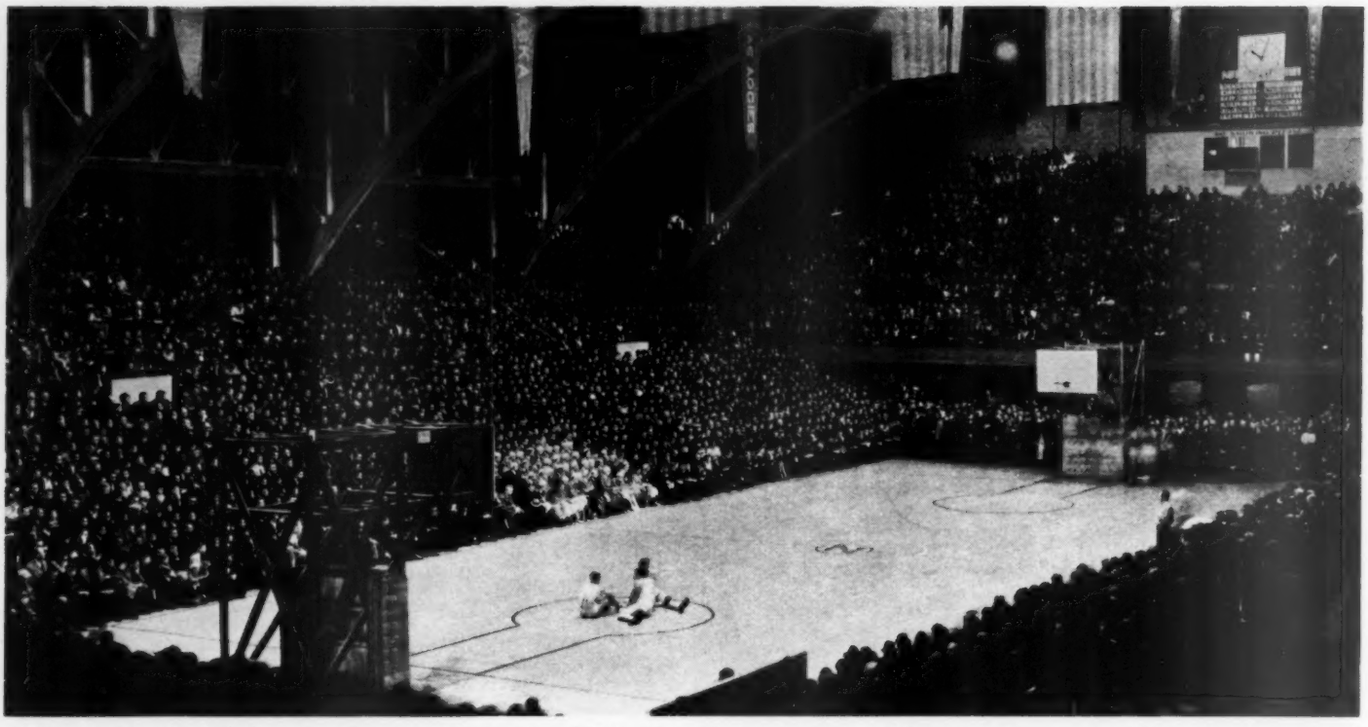


Time-out in a basketball game between the University of Nebraska and the University of Kansas, February 28, 1936, in the University of Nebraska Coliseum. This game drew the Big Six Conference record crowd; paid admissions totaled 7,378. The large attendance at Nebraska games is indicative of the popularity of the style of game played by this team. Nebraska's electric clock makes the official time plainly visible to both player and spectator. This is an important feature in holding the interest of the fans.

The Fast-Break Offense in Basketball

By W. H. Browne
University of Nebraska

A POINT-A-MINUTE scoring machine, which finished a twenty game schedule with thirteen victories in intersectional and conference competition—this was the University of Nebraska basketball squad last season. The Nebraska offense, which kept the fans at fever pitch during most of the forty minutes of each game, featured a fast-break which swept up the floor in rapid-fire fashion, rolling up a season's total of 828 points for an average score of better than 41 points a game. An example of high scoring was in evidence in the University of Oklahoma game, which was won by Nebraska, 55 to 28, and in the Iowa State College battle, which the Cornhuskers won by a 49 to 20 score. Even in defeat, Nebraska scored heavily. In the University of Santa Clara game, which Nebraska lost, the final count read 61 to 48. George Wahlquist, the Cornhusker's high scoring forward, equaled the Big Six Conference record with 124 points in ten Big Six games and was well over the 200 mark for the season. The fast-break offense employed by the Cornhusker team is described in this article by W. H. Browne, who joined the coaching staff of the University of Nebraska in 1930 and has been Head Basketball Coach since 1932.

THE fast-break type of offense, even though not always on the winning side of the ledger, assures basketball fans of plenty of action and thrills. It has been a great factor in increasing the crowds at the University of Nebraska Coliseum. Last year, in spite of sub-zero weather, all of the Cornhusker home games were played before near capacity crowds. The high spot of the season came in the final battle with the University of Kansas, the two teams playing before 7,378 spectators who paid to see the contest—the largest crowd ever to witness a college basketball game in the Missouri Valley area.

The whole-hearted enthusiasm displayed by Nebraska basketball fans through their attendance and loyal support during all of last season is indicative of the popularity and drawing power of the fast-break style of play. The offense used by the University of Nebraska last year called for a fast-break attack whenever the opportunity was present. As soon as the defense became massed, the attack took the form of a five-man interchanging of positions system, or free lance game, which would require another article for explanation.

The fast-break as a major offensive threat, to attack a set defense using the zone principle or a pressing man-to-man style of play, is the most logical way to defeat either style of game. There are several methods of executing the fast-break. There are different ways of initiating the break and continuing the drive to score, but all fast-break systems have the same objective in mind.

The main purpose in using a fast-break is to beat the opponents down the court, or to get one man clearly in the open, to gain an advantage of two offensive men on one defensive man, or three offensive men on two defensive men. Some systems go as far as four men on three and even five men on four. After three defensive men are set, the value of the fast-break principle decreases considerably. I prefer to think then in terms of possession of the ball or attacking with the five-man interchanging of positions offense, which co-ordinates in an excellent manner with the fast-break idea.

This fast-break type of offense is sometimes called the "helter skelter," "fire ball" or "slam bang" system. When in use by some teams whose carelessness, lack of purpose and limited skills are evident, the names are appropriate.

To be successful with this style of play against equal competition demands speed in using the long and short passes, cleverness in handling the ball while going at top speed, accuracy in the use of the short shot while driving under the goal, purposeful use of the dribble and thorough understanding by all players of the team play involved.

As soon as the defensive men number the same as the offensive men, the fast-break principle is lost, and, as previously stated, when three defensive men are set under their goal, even though the offense has four or five men to attack, I believe the offensive thought should then be concerned with the five-man interchanging of positions system.

The fast-break relies, first, upon speed and quickness in getting about the floor. These demand endurance and stamina in the players. Second, it requires speed in passing the ball and calls for habit drills to develop accuracy in handling the ball at full speed. Third, it demands speed in shooting goals, which implies specialized skills and technique in shooting from both long and short distances. Fourth, it calls for speed in thinking, which results from a knowledge of team play practiced until it has become almost habitual. Fifth, it demands speed in seeing. This comes by conscientious practice, study and experience in playing the game.

A fast-breaking offense is exacting of the players, and, to be successful, each player must be physically fit, mentally alert, possessed of better than the average skill in the above mentioned speeds and gifted with determination, courage and fight, expressed in athletics by an unbeatable spirit.

Centers Ray Noble of the University of Kansas and Floyd Ebangh, No. 32, of the University of Nebraska taking off in pursuit of a toss-up in the Jayhawker-Cornhusker basketball game last winter in the University of Nebraska Coliseum. Bob Parsons, No. 18, Cornhusker guard, is the player gazing at the ball, which he hopes will be tipped his way to start Nebraska on a fast drive to score.

The fast-break is possible when possession of the ball is gained, regardless of when or where it occurs. It is a faster break than from offense to defense. The players are trained to be alert and to intercept opponents' passes for a quick dash down the floor to score, by means of the long pass as a starter. The defense used must co-ordinate with the offense in order that the players will be in position for the quick dash down the court regardless of where the ball is recovered. This possession of the ball may come from an intercepted pass, the recovery of a fumble, a rebound from the backboard, an opponent's free throw made or missed, a center jump, a held ball or on an out of bounds play.

Henry Whitaker of the University of Nebraska, No. 13, ready to follow in a shot taken by his team mate, George Wahlquist, at the end of a fast-break drive. The pass to Wahlquist came from a player in the middle lane, not seen in the photograph. A University of Kansas guard, No. 55, has just shifted to take a cut at the ball after it has left the shooter's hands.

When the ball is recovered, there should be a team understanding of the start and outlet passes to be used to initiate the fast-break. An offensive balance must be maintained which insures reasonable defensive balance. The system should be flexible and adjustable to different floors and strange conditions. Therefore, there are no hard and set rules about the path of the ball. Individual skill and excellence of play are of greatest importance. The system has a purpose and is definite enough for the players to anticipate the action to follow, where to look to make a pass and where to break to receive a pass.

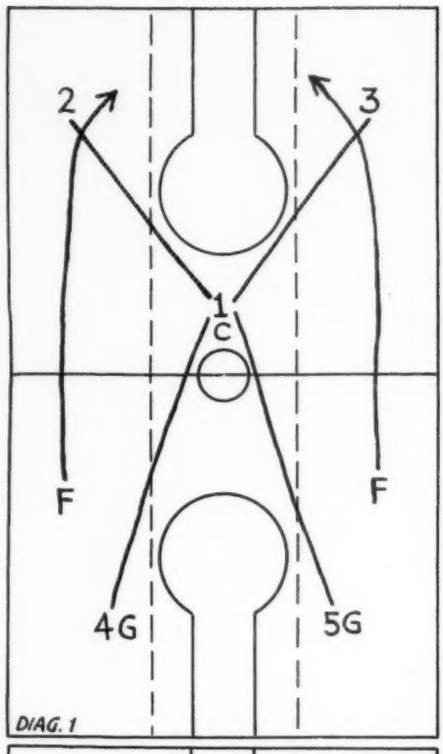
The success of the attack demands at least one man and should have two men ahead of the ball to open up the court and spread the defensive guards. A third

man should be in the middle of the court, ready to create openings by shuttling back and forth, to take the open lane and to follow in all shots. Every pass made must be forward, or the effectiveness of the system is lost. If a backward pass is made, a long pass must follow if the fast-break is to continue. Both from the offensive viewpoint and for defensive balance, men must have speed and drive to get ahead of the ball. There must be no loafing or "dog trotting" around the court. The speed should be expressed in terms of quickness and agility in starting, stopping, changing direction and change of pace. Lightning darts here and there rather than the speed of a dash man contribute to the success of the system.

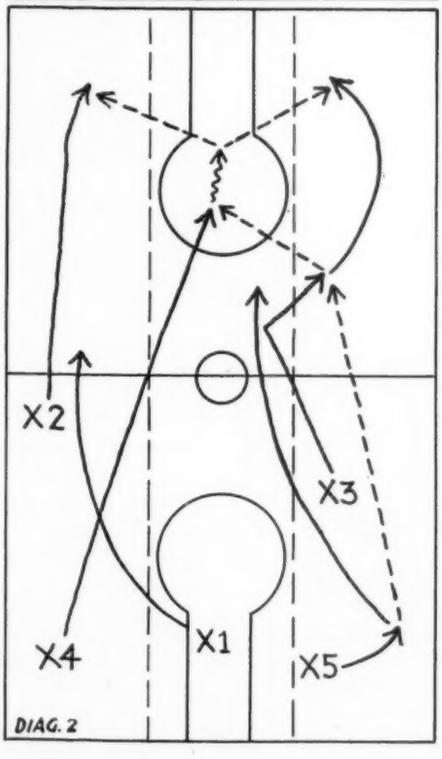
Many plays may be diagramed to show the "outlets" or the various ways to start the attack. The players must learn to take the shortest possible route, to make as few passes as possible, to look for an opportunity to pass rather than dribble, and to curb their natural tendency and desire to shoot for the basket. Passing to a team mate closer to the goal or in a better position to score indicates a realization by the player of the value of possession of the ball and is a factor in the elimination of wild shooting. This makes for balance, control and concentration on shots that have a fair chance of hitting the goal. It also insures that rebound territories may be covered by team mates when a shot is made.

The three lane system of dividing the court is used. Forwards must create openings for passes from the guards and force the defense to spread by holding the area open in their lane to the goal. By breaking fast and early, many times the forwards will be able to get behind the men guarding them, or at least make them retreat and open the middle of the court where the player in the middle lane then becomes the threat to drive in and score—or bluff to score and then pass to a team mate on the side.

The guards in taking the ball off the backboard must be drilled in the skill and technique of getting the ball out to start the break. A long pass to an unguarded team mate breaking toward the basket behind his guard is the first threat to score. If this pass is not open, then a pass to a forward on the side of the court should be made. (See Diagram 2.) The ball should always be passed to the forward cutting toward the side line or away from the side line and in front of the guard to keep the opponents from intercepting the pass. Considerable practice is essential to develop skill in using this type of pass. If these outlets have been blocked, the player in the middle lane should be open for an outlet pass. The free guard, or center, should break across the court toward the side line to create an easy outlet for the ball when the player in the center lane is covered. Passing back



DIAG. 1



DIAG. 2

under the opponent's goal should be prohibited.

If the guard brings the ball out to the middle of the floor, he should take the middle lane, making use of floating passes and a driving dribble to advance the ball. The team moves in a double V formation, which insures offensive strength and versatility, as well as defensive balance. (See Diagram 1.)

Considerable time should be spent on developing the skill necessary to recover the ball and initiate the fast-break. Many situations should be practiced to show how to continue the break through the middle of the court, and, finally, several possible ways to continue the drive to score should be practiced. The tendency is for players to drive to the basket and attempt a shot to score regardless of the spot from which they are shooting, or the conditions under which they are forced to shoot. A realization of the importance of possession of the ball should be emphasized. The coach should curb the tendency to shoot wildly and must keep within reasonable limits of the ability of the players under these conditions.

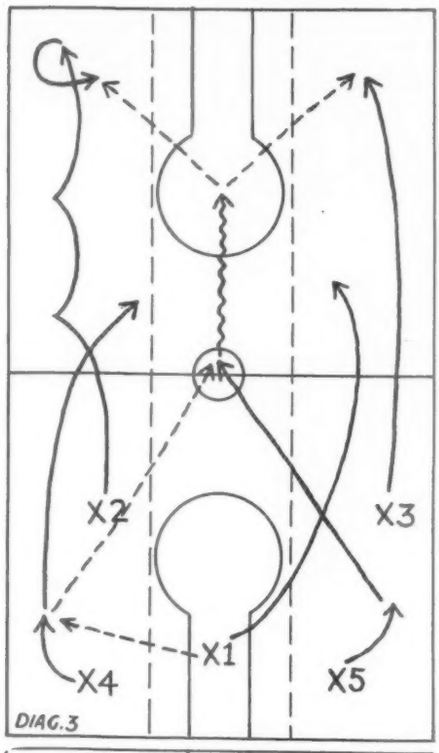
A successful fast-break demands the finest type of polished players, skilled in the fundamentals and capable of instantaneous response and lightning decision. It is the most effective way of defeating all types of defense. After a defense is set, or massed under the goal, the fast-break idea is lost and the attack then takes a different form.

The accompanying diagrams show several types of plays and the path of the ball to the goal. These diagrams may suggest many other plays to the coach, who can adapt them to the material he has at hand. Each diagram shows the floor divided into three imaginary lanes which the players follow in employing this system.

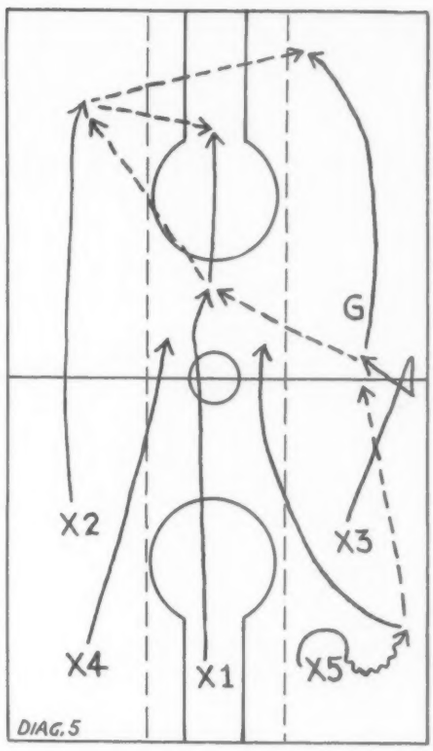
Diagram 1 shows three players, two forwards and the center, in an offensive V formation. The men in the outside lanes are ahead of the man in the middle lane. The player in the middle lane, 1, forms the base of the offensive V, represented by the positions of 2, 1 and 3. The defensive V is represented by the positions of 4, 1 and 5. These two V formations insure offensive strength and versatility as well as defensive balance.

In Diagram 2, X5 has taken the ball off the opponent's backboard and has quickly passed it to X3, the forward in the lane on X5's side of the court. X2, the forward in the lane on the opposite side, breaks fast to create an opening or to force the defense to retreat. X4, the guard who did not initiate the play, drives down the center lane. X3 then passes to X4 and breaks toward the goal. X4 may dribble in, or pass to X2 or X3. X1 and X5 trail the play as safety men and as outlets for passes in case the drive to score is unsuccessful.

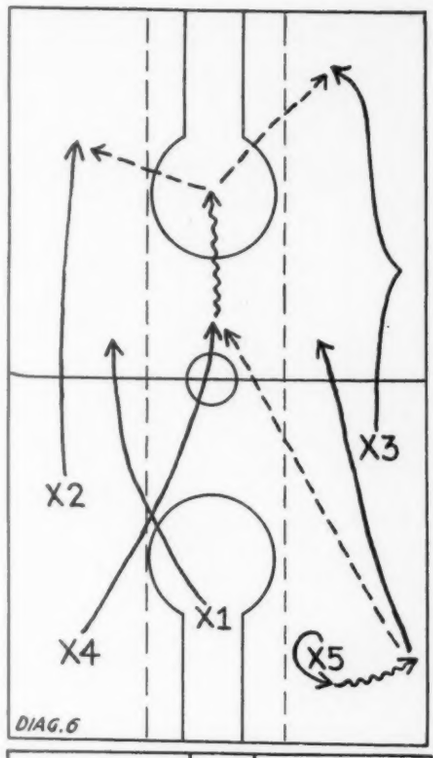
Diagram 3 illustrates a situation in which X1, the center, has recovered the ball from the opponent's backboard. X2 and X3 break immediately down their lanes to force the defense to spread and to open up the center of the court. X1 passes to X4, who looks for an opportunity to make a long pass to X2. If X2 is covered, the pass is made to X5, breaking toward the middle lane. X5 may dribble in or pass to X2 or X3, driving under the goal. X4 and X1 trail for outlet passes or for a drive to the goal to receive a pass and take a shot.



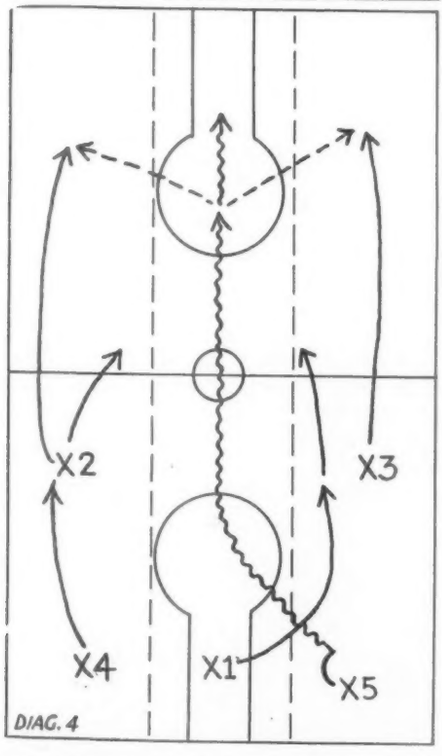
DIAG. 3



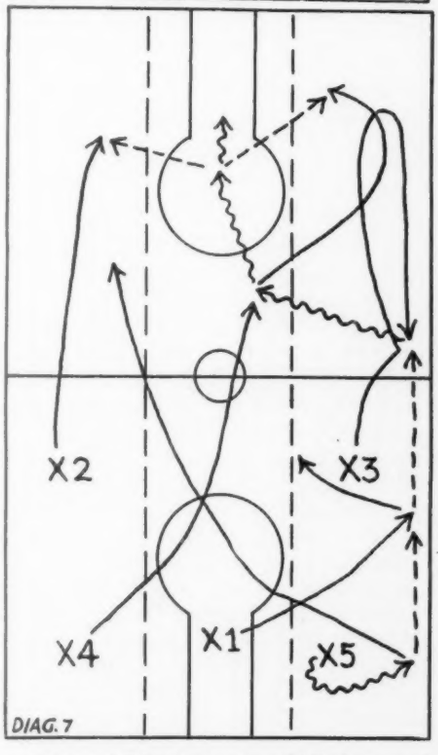
DIAG. 5



DIAG. 6



DIAG. 4



DIAG. 7

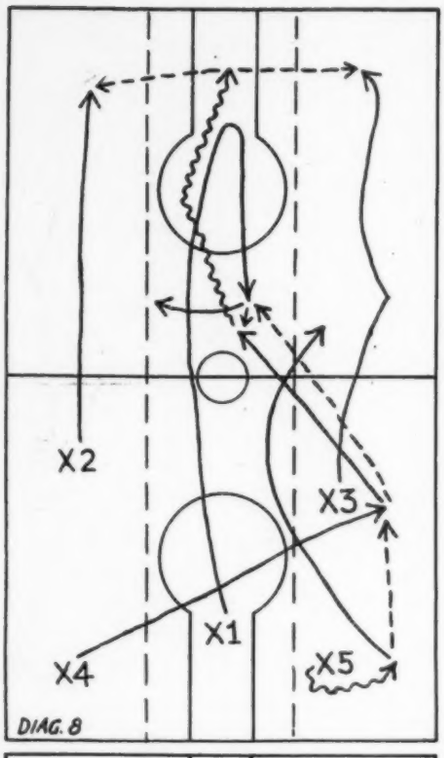
In Diagram 4, X5 has again recovered the ball from the opponent's backboard. He pivots to the outside but finds his progress blocked. He immediately pivots again and swings up the center lane with a driving dribble, which he continues until an opponent bars his progress, or until he finds opportunity to make an open pass to X2 or X3, who have driven down their lanes and held open the area near the goal.

In Diagram 5, X5 has recovered the ball, pivoted to the outside and passed to X3, who has reversed his original procedure and, after faking to receive the ball over his outside shoulder, driven in front of his guard to receive a high pass from X5. X3 tips the ball to X1, who has taken the middle lane because X4 has become involved in the scramble under the goal, and because X1 is free to assume the pivot position. X1 tips the ball to X2, driving toward the basket. This play seems simple and yet it is very effective when the break has been successful and the offense has three men down the floor to two defensive men. X5 and X4 become the defensive trailers.

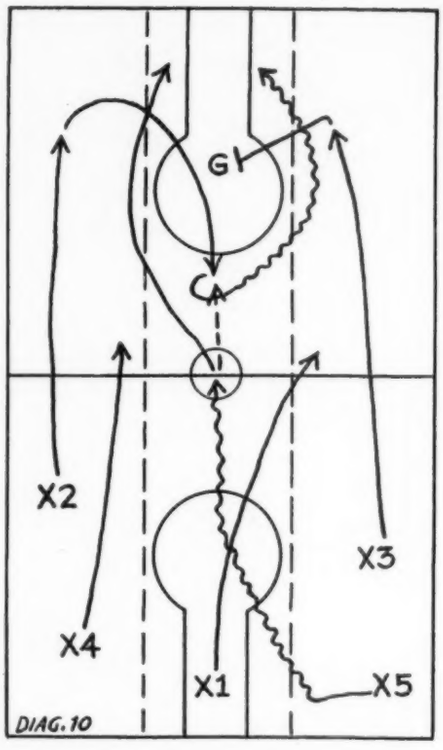
As in the previous diagram, in Diagram 6, X5 has recovered the ball and pivoted to the outside. In this diagram, he has used a drag dribble to the corner. He finds X3 so far down the court and with his guard so close to him that a good pass to him is impossible. X2 has also penetrated deep, forcing his guard back and leaving the middle of the court open. X5 makes a high hook pass to X4, driving into the middle lane. X4 now has the option of a driving dribble to score or a pass to team mates X2 or X3. X5 and X1 become the trailers and safety men.

In Diagram 7, X5 has again recovered the ball from the opponent's backboard but has been delayed in getting the ball passed out. When he finally frees himself with a pivot and dribble to the corner, he finds X2, X3 and X4 have broken fast and are deep in the opponent's half of the court. X1, who has been involved in the scramble for the ball, breaks to the side line, creating an opening for a pass. X5 then passes to X1 on the side of the court. X3 breaks back to meet the ball and receives a pass from X1. X4 now crosses the court to take the outside lane, as X3 makes a driving dribble into the middle lane and goes on to score or to pass to X2 or X4. X1 and X5 are the outlet and defensive men.

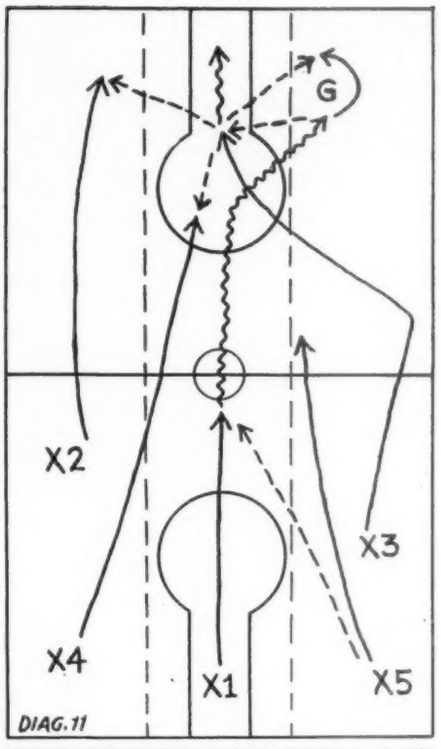
Diagram 8 shows another play with X5 starting the action by a driving dribble to the corner. The action has been delayed, allowing X1, X2 and X3 to penetrate deep in their lanes. X4, being involved in the scramble for the ball while X1 was taking the middle lane, is now the player to drive to the right side line to create an opening for a pass. X5 passes to X4, who then passes to X1, shuttling back to meet the



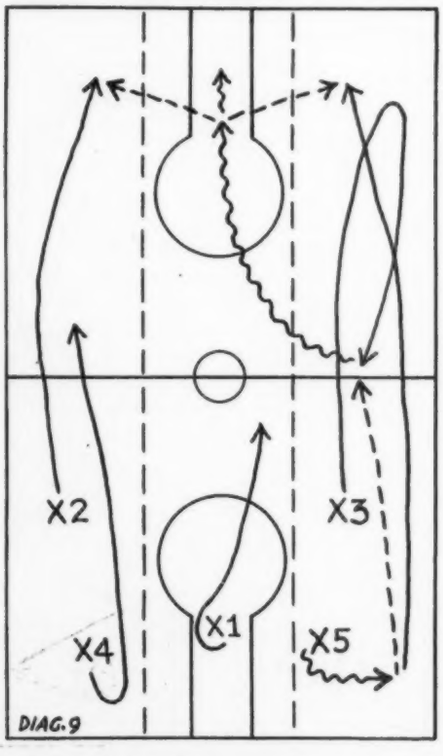
DIAG. 8



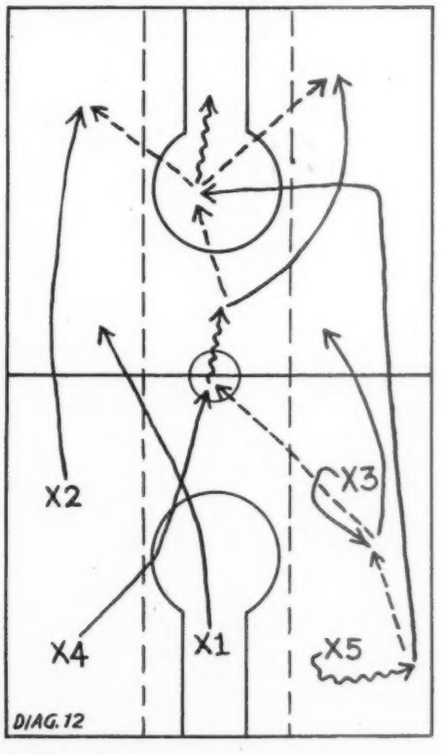
DIAG. 10



DIAG. 11



DIAG. 9



DIAG. 12

ball. X4 follows his pass and cuts around X1 for a screen on his guard. X1 hands the ball to X4, who dribbles in to score or passes to X2 or X3. X5 and X1 are the outlet and defensive players.

Another variation for X5, who recovers and starts the fast-break, is illustrated in Diagram 9. When X5 has pivoted and dribbled to the corner, he finds X2 and X3 deep in their lanes and each covered by a guard. X1 and X4 have also been delayed, and the middle lane is open. X3 breaks back fast to meet a pass from X5. X5, after making the pass to X3, continues on a fast drive down the outside lane to receive a return pass from X3, who has dribbled into the middle lane but has been covered by a defensive player. X3 may pass to X5 or X2, or continue with his dribble, should his guard shift to cover X5, driving toward the goal. X1 and X4 trail the play.

Diagram 10 shows X5 starting the play with a dribble up the center of the court. X2, after driving down the outside lane, breaks back to the middle lane to meet a pass. X5 passes to X2 and drives toward the goal in the outside lane. X2 bluffs to return the pass to X5 but pivots and dribbles around X3, who has taken a position near the free throw line to set a screen on X2's guard. X2 may pass to X5, on his left, or to X3, back of him. X4 and X1 are the outlet and defensive men.

A simple but effective fast-break play is shown in Diagram 11. This may be used when a tall center is available. X5 makes a high spot pass to X1, the tall center, who is in position to break first down the middle lane. If a guard forces X1's dribble to the side line, then X3 drives behind him through the middle lane and receives a return pass. The optional passes are evident in the diagram.

Another slight but effective variation is shown in Diagram 12. This may be used by X5 if, when dribbling to the side of the court, he finds X3 has been delayed in going down the outside lane. X5 passes to X3 and drives down the side of the court. X3 passes to X4, who has started his drive down the middle lane. X4 passes to X5, breaking in toward the goal, and swings to the outside lane. X5 may pass to X2, who holds his area open, or to X4; or he may use a dribble to score. X3 and X1 become the outlet and defensive men.

These plays may all be reversed and used on the opposite side of the court when X4 recovers the ball from the backboard and initiates the fast-break.

Diagrams could be drawn to show the possibilities of a fast-break from center tip, from an out-of-bounds play, from a made or missed free throw, from a held ball, from the recovery of a fumble or from an intercepted pass, regardless of where the ball is recovered in the court. The diagrams given are sufficient to ex-

plain the three-lane system and to show the offensive triangle threat, as well as the defensive triangle for safety; to emphasize the use of the long pass, as well as the short pass; to bring out the necessity for speed, purposeful use of the dribble, control of all passes and proficient timing by the players in the execution of all fundamentals necessary in this style of game.

Training, Conditioning and the Care of Injuries in Wrestling

By Richard K. Cole
Brown University

IN this article, Richard K. Cole, Wrestling Coach at Brown University, gives a number of useful hints relative to training and conditioning the wrestling team. He also outlines measures for the prevention and care of injuries and ailments common to wrestlers. Previous articles by Cole have dealt with technical phases of wrestling. An article by him, "Unusual Pinning Combinations in Amateur Wrestling," illustrated with nineteen action pictures, was published in the October issue of this periodical. Cole is a graduate of Iowa State College, where he worked under Hugo Otopalik. In 1931, his senior year, he won the 135-pound National Collegiate wrestling championship. The picture of him which accompanies this article was taken while he was an intercollegiate wrestler.

A COMPLETE and thorough medical examination by a competent physician should be the first throught of any individual anticipating athletic participation. A sound body is by far the most important requisite for physical exercise. It has been well and truthfully stated that athletics will not hurt the normal individual. However, if one enters into strenuous exercise freighted with an ailment such as a rupture, an organic heart murmur or weak musculature, he is certain later in life to regret his action. After all, it is a poor gamble to start on any enterprise if one's liabilities are greater than one's assets. An athlete who has been certified as to physical fitness need not fear any detrimental results from athletics. Naturally, however, maladjustments can develop, and a yearly physical and medical examination would not be amiss.

When a coach calls his team out for practice, one ever increasing purpose possesses him. This may be expressed in the thought, "Get the men into condition." It is necessary to work a team easily and slowly at the start for several reasons. First, the candidates are not in shape to work hard or long. Secondly, they are susceptible to injury because their muscles are soft and their nerves untrained for quick responses. Thirdly, soreness and stiffness are sure to result from overexercise at the beginning. Thus a coach should be careful, when opening the season, to round his men into shape by employing a method of gradually increasing the intensity of practice.

Workouts

At the start of every practice, the entire group should go through calisthenics as a warm-up. Bridging, abdominal exercises, push-ups and general stretching of all muscles of the body should be included. Apparatus work is very beneficial as a conditioner. It may be taken before or after wrestling practice, but is probably best after practice. Rope climbing and rope skipping, chinning, rowing and running are good for the general conditioning of the body. To strengthen the abdominal muscles, it is a good idea to place the men in a circle and have them pass a medicine ball around so that it hits the abdomen and causes the receiver to contract his abdominal muscles.

Wrestling workouts are of two kinds: those for beginners and those for veterans. Participants who are new to the game will require more time to master holds, grips and combinations than will the seasoned grapplers. Thus much practice at one-fourth or one-half speed will be necessary for starters. On the other hand, men of experience require less time for a workout, as they can go at top speed. Thirty minutes of wrestling a day is plenty to keep a man in good shape. Some time should be given to strategy and rules interpretation.

Richard K. Cole

The shower should be taken as soon after practice as possible. Washing with coarse salt and massage with a rough towel are invigorating and helpful in toughening the skin. The bath should not last more than five minutes. A long, hot shower is usually detrimental because it is very relaxing and because it causes dilatation of the blood vessels and a secondary perspiration after the athlete is dressed. A cooling shower gives the muscles increased tone and prevents the secondary perspiration. Therefore, a shower should consist of a short hot bath followed by a short cold one.

Sleep, Diet and Cleanliness

Without doubt, the most important training rule is that the athlete should have plenty of sleep. Eight to ten hours are necessary and ten hours are preferable. During practice, the body tissues are torn down and depleted of energy, while during sleep they are built up and replenished with combustible products. Plenty of exercise and little rest result in playing both ends against the middle, and the aftermath is always disastrous. It is really straining the body and not training it.

Diet has always been a topic of great controversy. Let it be said that all great coaches advocate the taking of all foods that are agreeable. Everyone is different regarding his digestive capacity. Many people are sensitive to certain foods and should naturally avoid them. The wrestler may eat anything that agrees with him but must be moderate while doing so. The meal before a contest should not be large. If the wrestler eats from three to five hours previous to competition, a small baked potato, a piece of broiled meat, toast and well sweetened tea are sufficient. It is far better to enter a bout hungry than to be bloated as the result of a heavy meal. After all, a wrestling match is short, and recuperation is rapid.

Clean mats and uniforms are indispensable in the sport of wrestling. Rubber mat covers should be swabbed each day

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JOHN L. GRIFFITH, Editor

Amateurism in Athletics

THROUGH all the years since school and college athletics, especially football, came into being, there have been persons who have been very cynical regarding the amateur status of school and college athletes. Since football has reached its present day proportions, the reflections made against college athletics on this score have been more and more marked. Whether the athletics sponsored by the educational institutions are today more venal than philanthropic, no one can say. It is our opinion, which for lack of statistical data can neither be supported nor refuted, that in the last few years we have lost some ground that had formerly been gained.

Whether or not conditions are getting steadily worse or better, let us assume for the sake of argument that athletics in the educational institutions are today being conducted more with the spirit of venality than with the spirit of philanthropy. The purpose of this editorial is to raise the question: "What is there that we can do about it?"

In the first place, there are some persons who are insisting that the colleges should pay their athletes. Those who advance this argument maintain that the majority of athletes are surreptitiously helped anyway and that it would be better to come out openly and put paid players on the field rather than to maintain a cloak of hypocrisy. These persons insist that the majority of players are helped, even though the boys and the school and college authorities know that this is not true.

Second, there are others who feel that conditions are growing worse, and, as a remedy, they propose that the individual institutions surrender their autonomy and entrust to some national bodies the responsibility of policing athletics in the schools and colleges.

Third, there are still others who believe neither that we can correct a wrong by legitimatizing it, nor that we can make men good by legislation, by entrusting to some group of men the responsibility of seeing that men do what is right. Those who constitute this third group believe that when athletics are improved it will be by the slow, painful and tedious process of education. They insist, first, that every school principal and coach and every college president and athletic director should be concerned, first of all, with his home situation. If every institution would maintain its athletics with respect to high ideals, then of course there would no longer be a national problem. Those of this school of thought believe in the old American idea that we must start with the individual and work up rather than that we can attain the desired results by working from the top down.

The Editor of this periodical believes in the philosophy of this last mentioned group. If the school and college men want amateur athletics, they will have amateur athletics. We need, however, more men who will do the things that are right even though it hurts. The boys on the teams are taught to fight for a cause. The time has come for those who want to preserve the ideals of amateur athletics likewise to fight for a cause.

Coaching Stability

SOME years ago a prominent university athletic coach had an unusually successful football season. His team won all of its games in sensational fashion, and his deeds and those of his boys were heralded by the press of the nation. That year some of the enthusiastic alumni wished to raise a sum of several thousand dollars to be given this coach in recognition of the part that he had played in bringing a championship to the university. The coach, however, refused to allow them to solicit funds and did not accept the gift.

A few years later this same coach had what was generally termed a very disastrous season. He is of the opinion that had he allowed the alumni to reward him as they proposed doing when he was winning he would not still be coaching at the university in question.

The experience of this coach has been repeated perhaps hundreds of times in universities, colleges and high schools during the past few years. More familiar, however, are the stories of coaches who, when winning, accept the rewards proffered by enthusiastic alumni and who, when losing, arouse the ire of these same alumni and suffer a fate less happy than that of the coach whose experience has just been related.

Human nature is pretty much the same the world over. Certainly it is the same in one place as in another in the college athletic world. When a coach wins, he is generally given more credit than he deserves and, when he loses, he is unjustly blamed for his team's defeats. While some coaches have better personalities and a better understanding of the technique of football, and are better teachers, than others, yet it is always well to remember that a good line makes a coach look good and a poor line makes him look like a poor coach. The fact is that no coach is a miracle man. All of these things are well understood by the men who are coaching, but they are not understood by the general public. Camp followers always insist upon placing heroes

on a pedestal to worship, and the same men with fiendish glee delight in knocking the heroes off the pedestal when the time comes. It is worth while, however, to realize that some men have more chance of surviving an athletic depression than others. It is also worth while to figure out the reason why this is so.

Football Offense

THERE have been many arguments in the military service in recent years regarding the different offensive arms. One school of thought maintains that the "doughboy" with the bayonet is the basis of military offensive strength; that the chemical, air and artillery departments are auxiliary weapons.

The other school maintains that one or the other of these so-called auxiliary weapons represents the major strength of our army when on the offensive.

As in military circles, so in football circles, there are two schools of thought. Some coaches think of the forward pass, for instance, as the main weapon when the team is attacking. The coaches who uphold this theory spend most of their time in developing the pass and trick plays.

The coaches who make up the other school of thought maintain that the running attack forms the basis of offensive strength and that the pass and trick plays should be classified as threats. These men maintain that if a team becomes pass conscious it will not drive through the line or off the flanks with the same precision and power as will the teams that concentrate on blocking and hard running on the part of the ball-carriers.

The coaches who believe in the pass as a primary weapon of attack do not entirely ignore the running plays and, on the other hand, those who think of offense in terms of running and bucking do not ignore the pass and trick plays. In other words, the difference between these two football schools is in emphasis.

It is interesting to note the results of games between teams representing these two different ideas of football. The scores, however, do not always tell the story, because one of the teams may be much stronger than the other with respect to material.

Olympic Trends

WHEN the Olympic Games were revived in 1896, by Baron Pierre de Coubertin, the sports in the various countries were for the most part administered by individuals and organizations that had volunteered their services. Further, in those days the teams from different countries were pretty much financed by public subscriptions. Today all this is changed, and in many of the countries the governments are assuming the responsibility of training, equipping and financing their Olympic teams.

It has been stated that, before the 1936 Olympic Games in Berlin, the German contestants had been in intensive training for two years. Germany's athletic program was carried out in connection with her program of youth training. Other national governments are assuming the management and control of Olympic athletics in their countries. If the time comes that these governments regiment the athletic youths, place them in camps, subject them to military orders and discipline and force them to train not in the spirit of sports, but solely to glorify the rulers under whom they serve, then the whole complexion of Olympic athletics will have materially changed.

With changing world conditions, it is to be expected that many people in the next few years will suggest that our government assume more control over our Olympic affairs and especially that the government appropriate money in support of our Olympic activities. Such suggestions should be frowned upon by all who believe in the amateur concepts of the Olympic Games. In this country, we have never believed that the government should assume the responsibility of directing or controlling the religious or educational institutions. No more should our government be asked to assume control of amateur athletics. When the athletes of the country are regimented and are forced to compete under orders, then athletics no longer remain amateur in spirit or in fact.

George Huff

COLLEGE athletics lost one of their finest and noblest figures when George Huff passed on. "G," as he was familiarly known to thousands upon thousands of University of Illinois students and to thousands of coaches, to say nothing of the great multitude which follows athletics, was a great character. He was great in that he did not think that he was great. He was modest and retiring almost to a fault. His fairness was so outstanding that the writer has never heard anyone impute or question it. He did not preach, and no one ever thought of him as a reformer, but he was a stickler for the rules when it came to playing according to the rules. It did not matter if he thought someone else might not be playing the game. He played it according to his understanding of the rules of the game. He did not preach clean athletics, but his administration and his life were an example of clean athletics.

There was no man on the Illinois campus who was more respected, honored and trusted than was "G." If the students, as sometimes happened, went on a rampage on May Day, it was "G" whom the Dean of Men called upon to ask the boys to disperse. When one of the banks in Champaign was tottering, it was "G" who addressed the mass meeting of depositors, and it is significant that the depositors followed his advice and, as a result, later received their deposits from the bank in full.

Amateur athletics have produced many fine characters, men who would not temporize with principles for expediency's sake, men who were in the game not for what they could get out of it but for what they could put into it, men who indelibly stamped their ideals and character on the minds and hearts of a great many boys, but the athletic world never produced a sportsman who towered above George Huff in character and that quality of fineness that marks a true gentleman.

Various Types of Defensive Play in Basketball

By Pierce Works
University of California at Los Angeles

SINCE 1922, Pierce "Caddy" Works has been Head Basketball Coach at the University of California, Southern Branch. Before graduating from the University of California at Berkeley in 1920, he won letters in both basketball and baseball. Besides coaching basketball, Mr. Works practices law in Los Angeles. In this article, he presents a careful analysis and comparison of the various types of defense now being used in basketball, pointing out both the strength and weaknesses of each.

ONE of the most noteworthy things about basketball today is the wide variety of styles of play exhibited by teams throughout the country. In some cases a particular style may be more or less regional in its nature, as, for example, the wide open, fast-breaking type of ball displayed by the Rocky Mountain teams.

In other cases widely differing styles may be found in the same locality or among members of the same conference. The Southern Division of the Pacific Coast Conference affords an instance of this latter situation; Stanford University and the University of California each operate on zone defense principles, while the Universities of Southern California and California at Los Angeles each employ straight man-to-man tactics.

Early Man-to-Man Defense

This situation, of course, has not always existed. Prior to the advent of the massed or position defense, there was no great dissimilarity in styles of play. The defense was universally man-to-man, with a back guard remaining constantly in the defensive basket area. The offense was fast-breaking in the extreme, a great many teams using the center as a "sleeper" under the offensive basket, his function being mainly to break out and receive passes from his oncoming team mates and then feed back into the play with an occasional reverse and dribble into the basket. When the ball was lost, the defensive principle was to "pick the nearest man and stick with him," the sleeper being responsible for the back guard.

This style of play was fast and a great crowd pleaser, but it is only fair to say that it was weak defensively. It possessed neither the direct responsibility afforded by the straight man-to-man defense nor the mass obstacle presented by the zone.

Position Defenses

The advent of the massed or position defense necessarily resulted in the introduction of siege tactics on the part of the offense. With the retreated defense in position, it now became necessary for the offense to pause and maneuver in an attempt to penetrate it. Thus the foundation was laid for the set offensive formations which are widely used at the present time.

Not all teams, of course, adopted the retreating defense principle. Here again we may refer to the Rocky Mountain teams as an example, featuring, as they do, a straight man-to-man defense over the entire floor. In the main, however, the position defense took its place as a conventional feature of the game.

It was at this point that the zone defense first made its appearance. Hitherto a more or less hit-or-miss, man-to-man defense had been the rule. The retreating position defense, however, was based upon the conception that its very mass would present a serious obstacle to the type of offensive than in vogue. Teams were not then, as they are now, accustomed to maneuvering against a massed defense in position. So some coaches became committed to the theory of mass, as opposed to individual, responsibility, which was and still is exemplified by the zone. Other coaches, however, while recognizing the value of the position defense in checking the fast-break, adhered to the theory of individual responsibility and hence continued to operate on a man-to-man, though position, basis. The two types of defense, with some variations which need not be discussed in great detail, have continued to be employed down to the present date.

Defensive Variations

These early position defenses were mainly of the 3-2 variety. In the case of the zone, the two guards were at first left to shift pretty much for themselves until bitter experience showed the advisability of dropping back the front line man on the "blind side" to help them out. A great number of teams using the man-to-man employed the "checking" system of having the guards responsible for the first two men through, with the front line men accountable for the remainder. Other teams, however, continued to employ straight man-to-man tactics, but attained the mass effect by dropping men back to mid-court and then picking up opposing players as they came through.

As time went by, the tendency of the offense to go into position formation, with two men out and three in, finally led to a great many of the zone teams matching this distribution, which saved the blind side man a lot of leg work.

Types of Defense Contrasted

This very brief résumé of defensive evolution brings us fairly well down to date. There are, of course, variations and even intermixtures of these two types of defense, but for our purposes it is sufficient to deal with the zone on the one hand, and the straight or assigned man-to-man and the checking man-to-man on the other.

It is self-evident, of course, that contrasting theories of defense necessarily lead to a great variety of attack on the part of the offense. This, of course, is a good thing for the game. It is distinctly a cause for congratulation that basketball has not been standardized, for, if such were the case, a great deal of the attractiveness of the game would be lost. The existence of rival schools of thought makes for progress, and in this respect basketball is no exception to the general rule.

Furthermore, it is only proper to say that the question of which of two given schools of thought is right and which is wrong, or whether the system advocated by either is superior to the other, is hardly one to be answered with positive assertions. The matter is purely and simply one of individual opinion and judgment. That judgment, to be fairly exercised from the coaching standpoint, must take into consideration a great many variable factors, such as, for instance, the quantity and quality of the material, the nature of the schedule requirements, the size of the playing floors, and the strength or weakness of the opponents and their susceptibility to a given method of attack or defense.

Relation Between Offense and Defense

In making any comparisons between defensive systems, there must constantly be kept in mind the interrelation between offense and defense. When all is said and done, the primary function of the defense is to lessen the team's offensive requirements. If your defense can hold the opponents to 25 points, your offense need score but 26 to win; but it must, at all events, score the 26 points. This, of course, argues the necessity of keeping a proper

(Continued on page 39)

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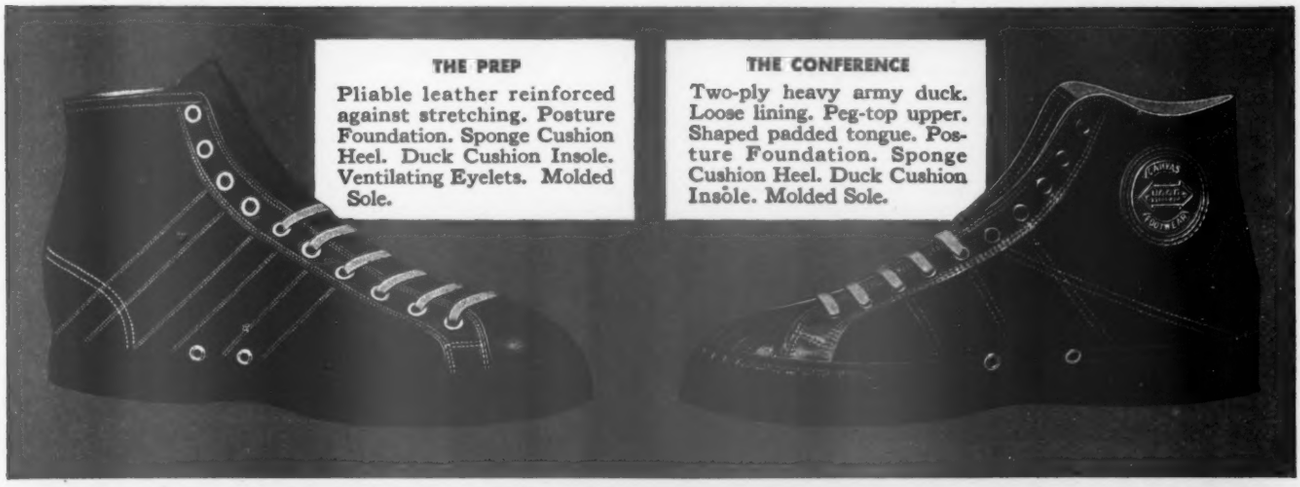

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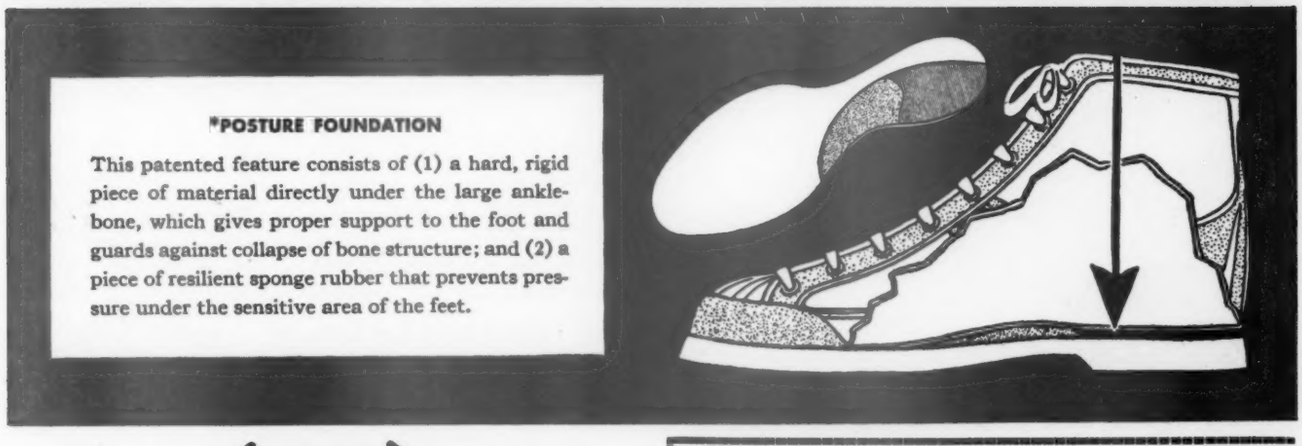

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Collegiate Cross-Country Running

By David L. Holmes
Wayne University

POSSIBLY we should start this discussion of cross-country running by quoting the old adage "There's them as can, and there's them as can't." We all know that some lads simply run and run without seeming to get tired, as you and I do—or did. Just why this is, no one can say; there are many physiological and psychological reasons advanced. My belief is that the blood of the comparatively tireless runners is highly alkaline, thus successfully combating the leg-killing, lung-paralyzing lactic acid which forms with the breaking down of tissue in extreme effort. For one reason or another, "Old Man Fatigue" delays his visit for a long, long time with some of these boys.

It seems to me that many boys do too little running, in the pre-season training and in the "peaking" period. I feel convinced that entirely too many run too much *after* they have reached their peak. We have all seen lads fall far behind the pack soon after the run starts, and come in at the finish completely exhausted. If they are physically fit to run and, if they have the proper competitive spirit, such a performance may mean that they have not run long enough, nor hard enough, in their daily training. On the other hand, how many times have we seen some hollow-cheeked, pale, nervous star completely fade out of the picture just when most was expected of him? It is my opinion that, in most of such cases, our star has had too much work after he is "tops." No ironclad rule can be followed in the training of a squad or of an individual. Weekly schedules cannot be followed rigidly. If a lad comes out on Monday with a bad cold, his schedule for the entire week will have to be changed, no doubt; if some lad begins to lag, or if one "peaks" too fast, schedules must be changed. Naturally, the cause of poor performance should be ascertained, if at all possible; or else the coach will have no idea as to what remedy to prescribe—even if he should happen to know one. So we cannot post our weekly training schedule and simply "run it out." Nor can any coach suggest a schedule that might be termed a "general training schedule" for any lad who is not a member of his own squad. This will be borne in mind when the weekly training schedules of Michigan State College, Butler University and my own institution are studied.

ONE of the most enthusiastic and thorough students of running in this country is David L. Holmes, who directs the athletic program and coaches cross-country and track at Wayne University, Detroit, Michigan. In complying with a request that he prepare an article on cross-country running, he wrote the following self-effacing sentences: "The suggestion that I write an article on cross-country running is complied with only after I have received several pages of written help from some of my friends who really know something about this sport. Frankly, I do not feel qualified to give advice along these lines without professional assistance. After something like thirty years of attempting to coach this sport, I am just beginning to wonder how to go about it. A letter of appeal to several coaches, whose teams have been outstanding for the past few years, brought immediate response from two of them. My thanks go to Loren Brown, Coach at Michigan State College, and to Hermon Phillips, Coach at Butler University. Loren ('Brownie') ran his first cross-country as a freshman, under my unhelpful tutelage years ago, and then transferred to Michigan State College, where he could get some honest-to-goodness coaching, and where he became one of the country's greatest cross-country runners. He now guides the destinies of that institution's cross-country teams, and we all know that a Michigan State team was national champion last year. Hermon Phillips has produced equally great distance runners, whose names are known to most of us—Sivak, Urbain, Jones, Boaz, Sears and others. Year in, year out, he trots forth at least one fine distance runner. So, if there is anything of a helpful nature in this article, let us thank these accommodating coaches."

Training Schedules

Relative to the training schedules presented here, it is necessary that I explain why my boys continue throughout the season to do part of their work on the track, instead of over a cross-country course. We are located in the heart of a city and must make a twenty-mile trip each time we go to our cross-country course, while our track is at the University. The boys cannot spare the time to go every day to train over the course; hence, once or twice a week we confine our work to the track.

Loren Brown of Michigan State College stresses calisthenics, medicine-ball catching and other exercises, as an integral part of the early season training schedule. He says that a great deal of practice —long, tedious drilling—is necessary to get into condition for cross-country running. Hermon Phillips of Butler University also stresses the point that a tremendous amount of practice is necessary to round into condition in this sport.

Brown calls attention to the fact that some of his men require only three prac-

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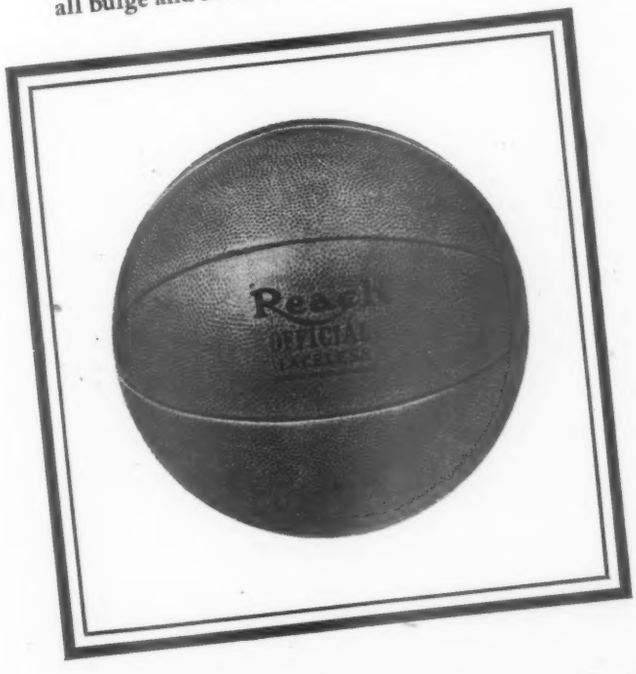

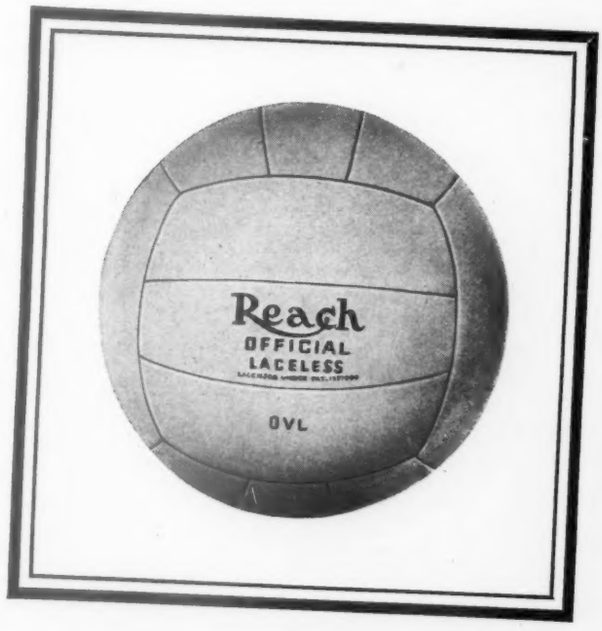

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Athletic IT PAYS TO PLAY **Equipment**

Weekly Training Schedule for College Cross-Country Runners

FIRST WEEK

	Michigan State College	Butler University	Wayne University
MONDAY	1½ miles on track—jog, walk	2 miles on track—jog, walk	1 mile on track—jog, walk
TUESDAY	Same workout as on Monday	Same workout as on Monday	Same workout as on Monday
WEDNESDAY	1½ miles—longer jogs than on Monday	2½ miles—same workout as on Monday	Same workout as on Monday
THURSDAY	Same workout as on Wednesday—longer jogs	3 miles—same workout as on Monday	1½ miles—same workout as on Monday
FRIDAY	1¾ miles—longer jogs than on Thursday	5 miles—same workout as on Monday	Same workout as on Thursday
SATURDAY	2 miles—all jogging	6 miles—same workout as on Monday	About 2 miles—easy jogging

SECOND WEEK

	Michigan State College	Butler University	Wayne University
MONDAY	2 miles on campus roadways—jogging	2 to 3 miles on easy course—jogging	2 miles on track—easy jogging
TUESDAY	Same as on Monday	Same as on Monday	Same as on Monday
WEDNESDAY	2½ miles—same as on Monday	Same as on Monday	Same as on Monday
THURSDAY	Same as on Wednesday	3 to 4 miles—easy jogging	2½ miles—easy jogging
FRIDAY	3 miles—a bit faster than on Wednesday	4 to 5 miles—easy jogging	Same as on Thursday, but faster
SATURDAY	3½ miles—same as on Friday	5 miles—faster jogging than on Friday	3 miles—faster jogging than on Thursday

THIRD WEEK

	Michigan State College	Butler University	Wayne University
MONDAY	4 miles over course—easy	5 miles over course—easy	7 to 8 miles over course—walk when side-stitch occurs
TUESDAY	3 miles over course—at three-quarters speed, with second mile at seven-eighths speed	5 miles over course—fair running	3 miles on track—fair speed
WEDNESDAY	3½ miles at three-quarters speed, with second mile at seven-eighths speed	Same as on Tuesday, but faster	8 miles over course—walk when side-stitch occurs
THURSDAY	Same as on Tuesday	Same as on Wednesday	4 miles on track, good speed
FRIDAY	2 miles over course—easy jogging	5 to 6 miles over course—same speed as on Wednesday	8 miles over course—faster than on Wednesday—try to run out side-stitch
SATURDAY	Same as on Wednesday	6 miles over course—fair speed	Rest

FOURTH WEEK

	Michigan State College	Butler University	Wayne University
MONDAY	About 5 miles over course—easy	5 miles over course—easy—working for rhythm and co-ordination	4 miles over course, checking at 1, 2 and 3 mile posts
TUESDAY	3 miles over course, with fast second mile	2 miles over course in about 11 minutes	5 miles on track—fair speed
WEDNESDAY	3½ miles over course, with second mile wide open	If meet is scheduled for Saturday, trials—if not, run first meet distance	If meet is on Saturday, tryouts—if not, same workout as on Monday
THURSDAY	2 miles over course—easy—speeding up here and there	8 miles—fair speed for building endurance—if no meet is scheduled for Saturday	5 miles on track—some speed work, also—if meet is on Friday, just warm up
FRIDAY	Rest	If no meet is scheduled for Saturday, long run	If no meet is scheduled, rest

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tices a week after they get "up," while others thrive on hard, hard work. He compares two of his stars specifically. He feels that he trained one of them, the freshman, Frey, too "fine" for the Olympic tryouts. (By the way, this young lad made a brilliant showing.) Brown's other star won a state title in the two-mile race by working every day in the week, Fridays not excepted.

Phillips reiterates the point that the training periods must be long and hard, not short and sweet; he stresses overdistance running as the season advances and the time gets faster. He has some of his men work five times a week, others only three or four. Brown, by the way, says that he may limit Frey to two running days a week when he becomes a varsity man, as the boy rounds into shape so easily and thoroughly.

Another point: Brown insists that his course be accurately surveyed, so that he and his runners know exactly what they are doing—that their first mile and following miles are *exactly* miles and not just approximate.

Form

As to the length of stride, the carry of the arms and other details of form, it might be well to say that no two men run alike. The best cross-country runner I ever coached—and he made the course in phenomenal time—ran with his head reared back, his chest out, his hands up around his chest and one foot swinging out at an inimitable angle. Another of our boys, who ran with him and tied him when the record time was made, worked eight hours every day at heavy labor in an automobile factory, carried a heavy course in the University and practiced when he could. I finally laid him off two weeks before this record-breaking final race, feeling that I had been training him too much. He responded by turning in by far the best time of his career. He had a beautiful style—a long, easy stride—a great sense of running pace and a competitive spirit hard to equal.

In general, I feel that too many boys have an idea that a cross-country runner

(Continued on page 37)

Mechanics of Basketball Officiating

By L. M. Clarno

BASKETBALL officiating has changed probably as much in the past fifteen years as the game itself. Fifteen years ago, the local official was still being used in the smaller schools, where the gymnasiums were too small to accommodate a good sized crowd; also, the interest in the game then was not keen enough to allow the local management to hire an outside official.

Later on, two officials were used, one man from out of town and one local man. This scheme did not prove satisfactory, and the next move was to hire two officials, one to be the referee and the other the umpire. At that time the referee had the more power and responsibility, and the umpire seemed to think it his responsibility only to call out of bounds and jump balls on his side of the floor. As the game was speeded up, new and larger gymnasiums were built and, as the interest grew keener every year, the local management was able to pay the same fee to both officials. Now we have come to what is called the "double referee system," which is proving satisfactory to both the officials and the coaches.

FOR the past fourteen years, L. M. "Dutch" Clarno has been officiating both basketball and football games among high schools and colleges of the Middle West. He has worked many games in the Big Ten and Little Nineteen Conferences. As an undergraduate at Bradley Tech, he won letters in four sports and in 1921 was selected as halfback on an all-star Little Nineteen honorary eleven. In this article, he offers a number of suggestions that should prove helpful to the beginning basketball official.

The Double Referee System

In the double referee system, the official who throws the ball up at center or elsewhere usually follows the ball, and the other one backs up in the defensive end of the court. While the ball is being brought up to the center of the court, one man is on the ball; the other gradually backs up, and, by the time the ball is brought up as far as the free throw line, the other official should be on the end line near one end of the backboard, but very seldom under the basket unless for a quick break which carries the ball under it.

When the ball leaves the shooter's hand, the man on the ball follows its flight; the man at the end line watches all players under the basket and forgets the ball. If the ball is intercepted in the center of the court or near the side line, the official nearer the play takes the ball and the other one goes for the defensive end of the court. That does not mean that the second official should hurry to the end of the court; he should judge his time according to the speed with which the ball is being brought forward.

On free throws, the referee takes the free throw line and the other official the end line near one end of the backboard. If the goal is made, the referee can back up toward the opposite end of the court as the second official, who was under the basket at the time of the free throw, will be in a better position to follow the ball, unless a long pass is made. If that occurs, the man who was formerly on the free throw line can follow it. With the double referee system, if both men take the same responsibility and both are alert at all times, the game will run more smoothly and will be a much easier game to work than if they used the old system. In addition, coaches and spectators will be better satisfied.

Suggestions to Young Officials

There are a few points that the older officials have learned by experience that may be of help to the younger men breaking into the game.

1—Always be in your dressing room at least thirty minutes before game time and one hour before, if possible. We have all learned that driving to a game or getting to the town by train just a few minutes before game time leaves us in a nervous condition. It is important that you go on the floor just as calm as the players, for you really are under more of a nervous strain than they are.

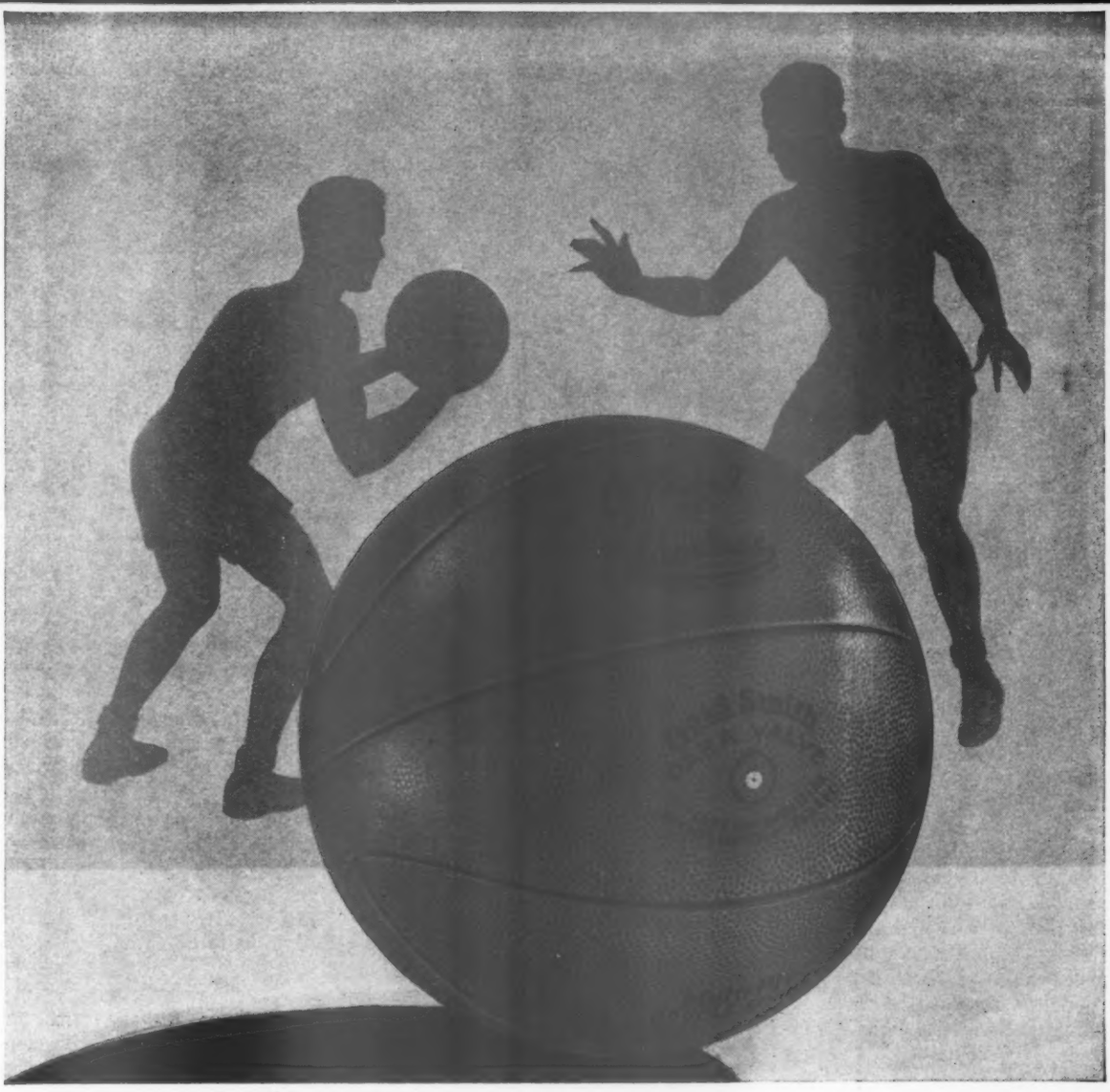
2—Always go on the floor neatly dressed.

3—Keep yourself in the *best* of condition, for you will be moving about on the floor more than any of the players. A player can occasionally relax, but there is never a time during the game that an official should allow himself to let down. When he does, something usually happens. If he is not alert, he will be late on the play or miss it entirely, and before long the game will be out of his hands.

4—Be courteous to the players, for they can be a great help to you if you can keep them maintaining a friendly attitude toward you.

5—Do not talk back to a spectator who has been "riding" you during the game, for it will only make you lose your head, and before long you will find yourself paying more attention to him than to the game.

6—Keep in mind that you are paid to give your best whether you are officiating a small game or a large one. If you are not satisfied with the fee, don't take the game. You are not only doing an in-



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justice to the players and the coach; you might be hurting yourself, for some coach of a larger school or university might be a spectator and he will also be passing judgment on your work. So give your best at all times.

7—When the game is over, go directly to your dressing room, take your shower, get dressed, collect your fee and leave. Do not hang around the floor and discuss the game, for no game was ever played that, if discussed long enough, would not result in some point of disagreement. You have given your best, the game is over and nothing can be done about it. Naturally, if a question concerning a rule comes up, be courteous enough to explain.

8—Do not put a coach in an embarrassing position by asking him for games, as he might have personal reasons for not using you. The home crowd may not like your work. One of his players may not like your work, although the coach himself may be satisfied.

9—Remember that 80 per cent of basketball officiating is judgment. Always be consistent.

Pre-Season Ice Hockey Practice and Conditioning

By Westcott E. S. Moulton
Pomfret School

LONG before the hockey season approaches, a conscientious candidate for the team can begin making preparations for the advent of ice. Although the rapid spread of ice arenas throughout the country has somewhat lengthened the season, still the vast majority of players depend on the elements for their skating surfaces. Because of the brief duration of ice hockey for any one year a smart player will devote a great deal of time to preseason practice.

For the player who is sincerely interested in developing his technique, there are numerous exercises, the faithful practice of which will go far to build him up for the coming games. The exercises here recommended should be practiced daily over as long a period as possible, the player increasing the time devoted to them as his muscles gradually strengthen.

Exercises for Ankles and Knees

Although it is nearly impossible to stimulate actual skating conditions without the use of ice and skates, it is important to approach as nearly as possible these conditions. The muscles which will be called into play later on the ice are those to which attention should be given.

Beginning from the ground, or from the ice, and working up, we first consider the ankles. A player improves his skating ability in direct proportion to the strength of his ankles. If they are weak and wobbly, his skating will be slow and uncertain, and his value as a player will be practically negligible. Rocking from the toe to the heel on both feet a number of times daily will strengthen the ankles tremendously in a few weeks. Walking for some distance on the toes, farther each day, will also help. Bending the knees in, with the feet out, and walking on the inside of the ankles will at first pull these important muscles and then gradually strengthen them. Following this exercise with walking on the outside of the ankles, the knees bent and bowed outward, improves the muscles on the reverse side of the ankles. Walking on all fours will help muscles in the ankles which are rarely used in ordinary life but which play their part in ice hockey. All of these exercises should be done gradually at first and then with more speed and longer practice periods as the muscles improve in power.

Next, we come to the knees, which should receive considerable attention to provide good underpinning for the player. All of the above exercises for the ankles are also good for the knees. But, to these, more should be added for greater results. Knee bending, fast walking while keeping the knees fairly stiff, and taking long strides in the manner of a skater will develop the knees quickly.

Wind, Speed and Stamina

The ability to keep going at top speed, to have an extra reserve of energy late in the third period, is directly tied up with one of the most important qualifications of a hockey player, namely, wind. There is perhaps no better method of improving the wind than by wind sprints, which are used in many different sports.

One of the best ways to develop this valuable asset is to begin by jogging slowly a couple of hundred yards to start the blood flowing freely and to warm up the muscles and tendons. After this, a whistle may be blown at irregular intervals. Each time the whistle blows, the runner should stop as quickly as he can and then sprint in the opposite direction. This exercise is similar to what happens in a hockey game, as the play is continually going backward and forward, and the wind and stamina are exhausted unless the body is carefully prepared.

Hands, Wrists and Arms

Hands, wrists and arms are the next parts of the body to be developed. These are the parts which are most often overlooked by the average hockey player. In order to achieve a hard, accurate shot in hockey, it is imperative that the muscles which control the shot be carefully trained.

First of all, the fingers should be exercised to enable them to grasp the hockey stick firmly and to give power to the starting of the shot. To do this, one very simple exercise is to open and clench the fist as many times as possible until the hand gets tired. At first this does not take very long, but as the muscles are developed it will require a little more time. The grip is improved by many different methods. One good way is for the boy to chin himself each day, swing on the flying rings or do almost any other exercise in which a firm grip is involved.

Perhaps the most important single factor in giving speed and drive to the shooting of the puck is the strength of the wrist and its suppleness. The correct snap of the wrist imparts an added element of power to the shot. The first exercise to develop this snap consists of manipulating the wrists up and down as the arms are held straight to the front from the shoul-

WHILE attending Dorchester, Massachusetts, High School, Westcott E. S. Moulton was captain and center ice on the 1924-25 championship ice hockey team of the Boston High School City League. At Williston Academy, Easthampton, Massachusetts, he continued his activity in ice hockey and was captain and center ice in 1926-27. On the undefeated Brown University freshman hockey team of 1927-28, Moulton was again captain and center ice. He played three years on the Brown varsity hockey team and in 1930-31 was mentioned for All-American honors as center ice by a poll of hockey coaches. Besides ice hockey, Moulton played football and baseball on high school, preparatory school and college teams. Since 1931, he has coached ice hockey and football at Pomfret School, Pomfret, Connecticut. At the present time he is also Director of Athletics at this preparatory school.

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ders. Then a rotary motion should be started and continued until the wrists become tired. Following these exercises, the player should take a hockey stick and hold it in one hand approximately where that particular hand would grasp the stick in game play. Then, holding the stick out in front of his body, he should swing it from side to side until his wrist becomes tired. The same thing should be done with the other hand. After this, the player should grasp the stick in both hands and swing it slowly from side to side, increasing his speed as he gets warmed up. This exercise is one of the best for developing the fingers, hands, wrists, arms and shoulders. Shooting an imaginary puck at an imaginary goal with correct placing of the stick and the accompanying flip of the wrist is excellent practice. This should be continued, both forehand and backhand, until the player is tired.

Practice Shooting at Goalguards

Up to this point, the player needs no assistance and may practice entirely on his own, but there are further exercises which involve other players and perhaps an entire team. When the players have carefully strengthened their muscles for shooting the puck, a hockey goal may be brought out and the players instructed to shoot at it from various distances.

At first, there should be no goalguard in the net, although someone should be present to retrieve the pucks shot at the cage and to return them to the players. Enough goals should be set out to prevent overcrowding and allow each player the maximum of practice. Presently the candidates for the goal position should take their places. They should wear all of the equipment they would ordinarily wear in the game with the exception of skates. In place of these, they should wear well-padded shoes of a heavy make to prevent bruises which come from the impact of the puck on their unprotected feet. It has been found that heavy ski boots offer good protection because of the box toes and the heavy, wide leather soles, but there are many other methods of protecting ordinary footwear by the use of overhanging pads.

Use of Wooden Platforms

One of the best places to practice shooting the puck is on a gymnasium floor, but even this has its disadvantages because of the indoor lighting which is sometimes inadequate. Many schools have found that an outdoor concrete surface is best because it reproduces the natural lighting conditions which prevail in a game. Where concrete or cement is used, it is a good plan to have the players shoot the puck from wooden platforms three feet wide by six feet long. The smooth wood is more nearly like the surface of the ice than is concrete and does not wear out the bottom of the hockey sticks so quickly. When the puck is shot from a slightly raised platform, it is easier for the novice to lift it because his feet are on a lower plane than the puck, which tends to raise the puck higher when it is shot. After the beginners have mastered lifting the puck, it is a good plan to have another platform built so that it is about three inches higher than the surface of the shooting board. This, of course, raises the player up where he would be if he were on skates.

When beginning this practice, the players should be at a considerable distance from the goal so that the goalguard can gain confidence and assurance in his position. Then the players may work closer, always trying for accuracy in shooting for the corners of the goal and making it increasingly difficult for the goalie to stop the shots. For the final few minutes of the practice session, the shooters should come up within a few feet of the goal and try their short shots. In all drill periods, the backhand shot and flip should be practiced at the various distances. This practice will not only develop a quick-moving and expert goalguard; it has the double value of producing a team of accurate, hard-shooting players.

Westcott E. S. Moulton

Gymnasium Floor and Indoor Rink

The next form of worthwhile practice consists in lining up two complete teams on the gymnasium floor, showing them two or three simple plays and letting them put these plays into action slowly. This is to familiarize the squad with the plays before the season opens and also to develop play-consciousness, often sadly lacking in the American brand of hockey. At this time, passing should be stressed along with the other fundamentals of the game. If it is at all possible, it is an excellent plan to have the players use roller skates while on the gymnasium floor, as this nearly duplicates the ice game and will not only strengthen hockey muscles but also provide great enjoyment for the players.

Early in the fall season the ice arenas open throughout the country and it is then possible for many players to get in some real ice skating each day during the public skating period. This is, of course, ideal as a form of hockey practice because it involves one of the most important qualifications of a good hockey player, namely, balance. Skating without a hockey stick, gaining confidence and developing the muscles and wind are all exceedingly worthwhile. During this period, the importance of skating backwards, cutting to the right and to the left, stopping and starting quickly, zigzagging and skating for endurance cannot be overestimated. Players should be encouraged to skate as often as possible before the hockey season opens.

Training for Goalguards

Uninformed persons sometimes think that all the goalie has to do to be a good player is to stand in the cage and stop all of the shots possible. The professional player knows this to be untrue, as many of the best goalguards are also the finest skaters on the teams they represent. Because it is difficult to stand on skates and move quickly in the direction of the approaching puck, it is vitally important that the goalie have excellent control over his actions. Only through long, hard practice, skating at every opportunity and everlastingly concentrating on the art of balance under the most trying circumstances can he acquire this ability. Starting from an immobile position and darting quickly to and fro, and then returning in an instant to his original position, a goalie can acquire a high degree of confidence. He should practice getting up quickly from a sitting, kneeling or prone position and thus reproduce in these exercises actual game technique.

It has been found that the playing of ping-pong or table tennis improves materially the eyes of a goalguard. This game quickens the eye and demands a degree of concentration on the ball which corresponds in many ways to the movement of the puck in a hockey game. Not only does this practice stimulate the movement of the eyes; it also speeds up the movement of the hand in batting the ball back. This exercise aids the goalie in his later work of catching the puck or warding it off with the stick as he does in a game. All goalies should practice catching a baseball before and during hockey practice. Regular practice of this kind with the ball thrown from different angles and at different spots within the area of a goal cage will materially improve the ability of a goalguard.

Ice hockey is a scientific game, and the player who carefully plans his pre-season practice and conditioning, and sticks to his exercises, will undoubtedly find when the season opens that he has been more than repaid for his work.

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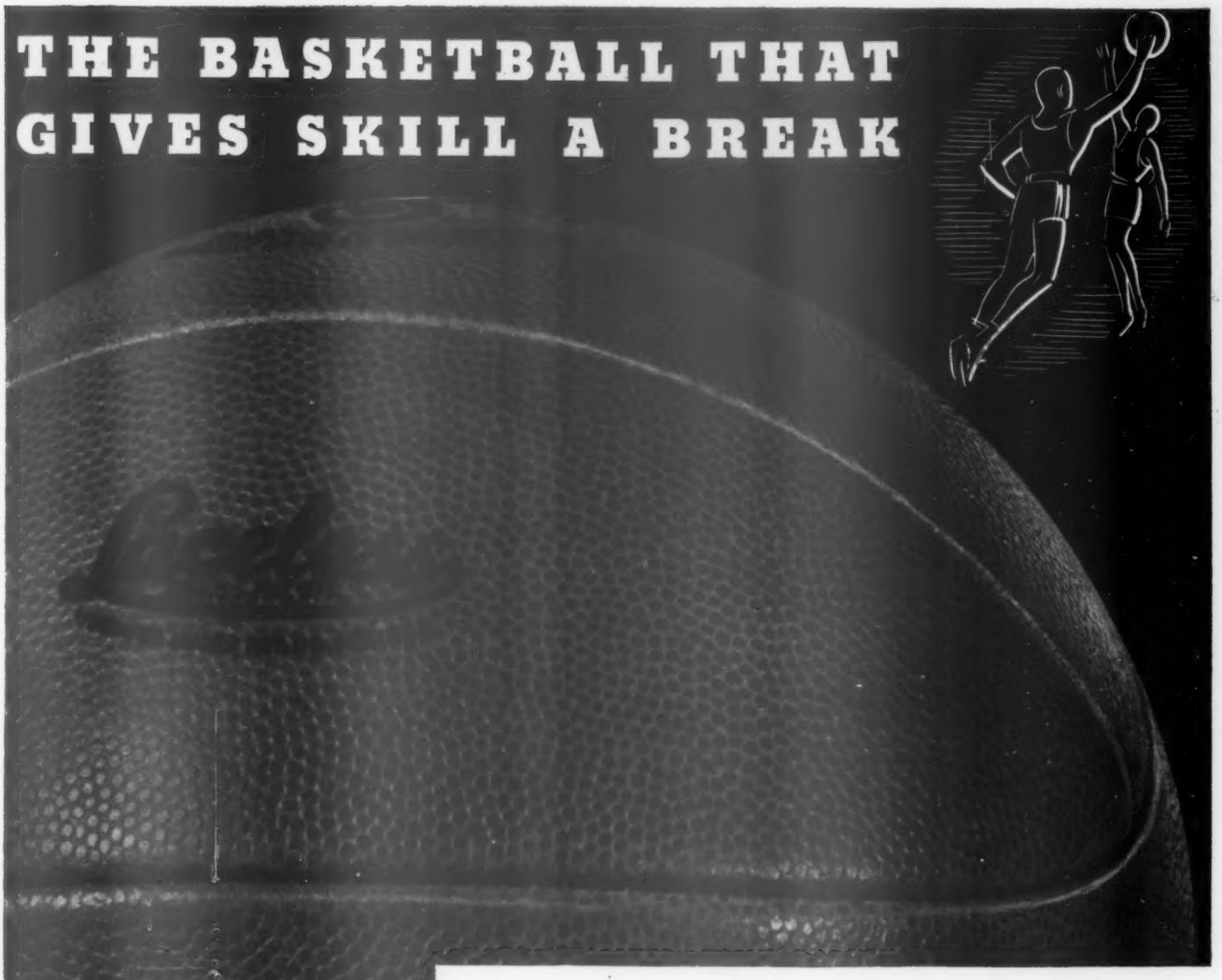

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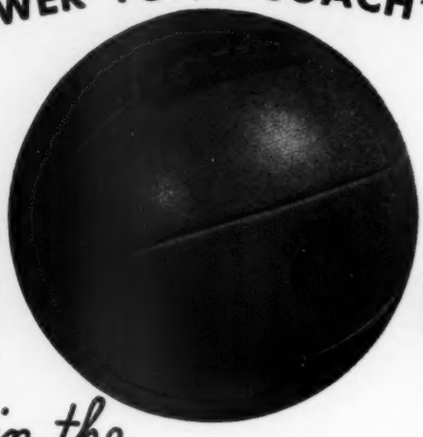

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Arranging Round-Robin Schedules

By W. A. Dill

University of Kansas

INTRAMURAL directors and other men in athletic work frequently are called on to arrange a schedule for games with the specification that teams are to meet at the same time, and that the schedule is to be completed in the least possible time. A table of pairings is easy enough to start, but it becomes hopeless unless a definite pattern is followed. A method that may be used for any even number of teams (include one bye if the number of teams is uneven) is as follows.

For convenience, designate each team by a letter; arrange a gridiron with one less column than there are letters, and one less space up and down than there are letters. In the A column, arrange the seven pairings for A, as AB, AC, AD, AE, AF, AG and AH. In the B column mark a blank opposite AB, since BA would be the same combination. BC cannot play the second date, since C is matched with A for that date; so enter BC opposite AD, BD opposite AE, and so on, with BG opposite AH. BH will fill the one remaining space in that column, the one opposite AC.

In the C column, the second and third spaces will be blank, since C is already scheduled with A on the second date and with B on the third. CD has to drop to the fifth date, since D is busy with B on the fourth date. The schedule when completed will appear as in Table I.

TABLE I

	A	B	C	D	E	F	G
First date	AB		CG	DF	EH		
Second date	AC	BH		DG	EF		
Third date	AD	BC			EG	FH	
Fourth date	AE	BD	CH			FG	
Fifth date	AF	BE	CD				GH
Sixth date	AG	BF	CE	DH			
Seventh date	AH	BG	CF	DE			

It will be noted there are four pairings for each date and that each date provides for all eight of the letters. Moving pairings to the left to fill blanks, the schedule as shown in Table II results.

TABLE II

First date	AB	CG	DF	EH
Second date	AC	BH	DG	EF
Third date	AD	BC	EG	FH
Fourth date	AE	BD	CH	FG
Fifth date	AF	BE	CD	GH
Sixth date	AG	BF	CE	DH
Seventh date	AH	BG	CF	DE

A five-team league would require five playing dates, since there would be but two matches on a given date, and one team idle. Representing bye by X, the five-team schedule would be as shown in Table III.

TABLE III

First date	AB CE DX
Second date	AC BX DE
Third date	AD BC EX
Fourth date	AE BD CX
Fifth date	AX BE CD

Books for the Football Coach

PROGRESSIVE football coaches who study the best and most recent literature on the game will welcome news of the latest publications in this field.

Written by the two Princeton University coaches, H. O. "Fritz" Crisler and E. E. "Tad" Wieman, *Practical Football* was published two years ago. This book is well illustrated, is still of current interest and is a worthy addition to the library of every close student of football.

Coming to join *Practical Football* on the athletic book shelf is a revised edition of Leroy N. Mills' *Kicking the American Football,* as well as John Da Grosa's *Functional Football.*

Mr. Mills is, perhaps, the most careful student of kicking in this country. The 1936 edition of his book, just published, contains material supplementing that of the 1932 edition.

Mr. Da Grosa's *Functional Football* is an excellent book, recently off the press.

Collegiate Cross-Country Running

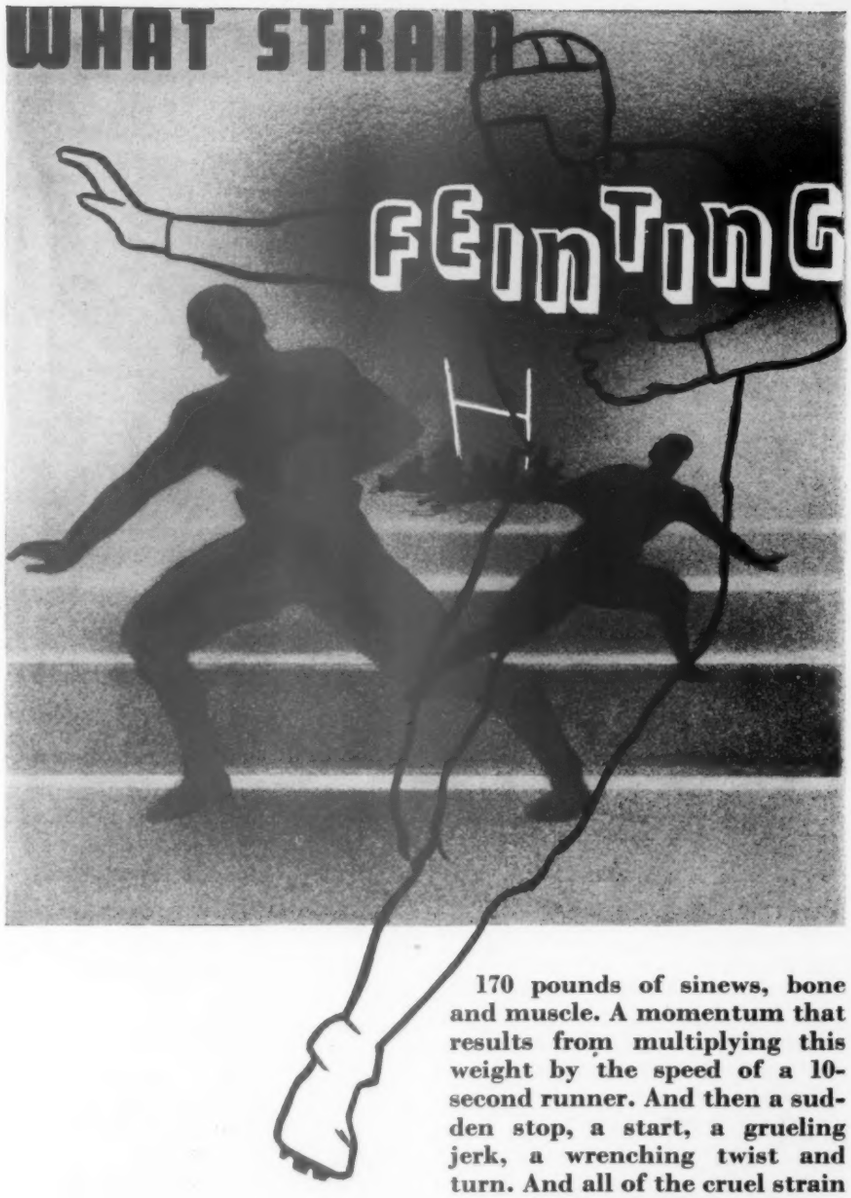
(Continued from page 30)

must develop a long stride. In my opinion, a long stride is a big mistake. A nice, easy, frictionless stride, one in which the muscles of the leg are allowed to relax completely as soon as the foot is lifted, seems to be indicated.

Perhaps I should say just a word about running up and down hills. The stride should be shortened for up-hill work. It should be lengthened, and completely relaxed, in down-hill work. If the hill is steep, it should be taken at an angle of 45 degrees, if possible, and probably walked instead of run. Nothing is more tiring to the lifting muscles than up-hill running.

Conditioning

Eating during the training period, and before races, is a problem to be solved by the individual runner and his coach. I believe that the only way a runner can find the correct diet is to experiment in the early training season, after he has rounded into pretty good condition. When he finds that certain types of meals, or certain foods, agree with him, that he runs well on them, he should stick to them. He should also determine how long to eat before a race—and how much. Most as-



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suredly, whatever he eats, and whenever he eats, he should eat slowly and he should not overeat. I favor plenty of citrous fruits, as they are highly alkaline. My good friend, Ray Conger, ate an average of five oranges a day, I believe, when he was training for his great race. He said that he experimented with practically everything and found that oranges seemed to be a great aid.

Plenty of sleep is, of course, necessary, as cross-country running is a tissue-tearing proposition and, therefore, a poison-forming one. Only during a good night's sound rest can the body eliminate poisons which pile up in fatigued muscles. If I were running cross-country, I should retire early at night and get up at five o'clock in the morning to do my studying. I am convinced that a hard night of study, when the body is too tired to stay in any position except "down," is not only a bad training method but injurious to health. If, by chance, the runner has a vacant hour immediately after lunch which he does not need to use for study, he should take a short nap. This will tend to make him feel eager to practice.

Most assuredly the men should be timed at different timing posts along the course and should be told their time as they train, when a timing program is indicated. Only by this method can a runner learn not only pace but his own weaknesses; this also is a help to the coach in determining how to condition and train each individual man.

Someone will ask, "What about this side-ache business?" I have consulted many fine trainers, athletes and authorities in the physiology of exercise in an attempt to find out just exactly what the "side-stitch" is. Some think it is a cramp in the diaphragm tissues, others think it is a cramp in the lateral muscles and many attribute it to nervous indigestion. I have, for a long time, thought it to be induced by a gas pocket, the causes of which may be many, under the circumstances.

Physiological Considerations

Let us not forget that a thorough medical examination should be insisted upon before a boy is allowed to go into hard training for this sport—or any sport, for that matter. Let us also not forget that a great deal of warming-up work is necessary before the start of a hard training run, or a race. The "steady state" is never reached until the temperature of the muscles has gone up tremendously. We know that, as soon as a runner gets under way, he immediately begins drawing on the reserve glycogen stored in the muscles. When that is exhausted, the glycogen storehouse, the liver, is called upon to furnish more fuel. Lactic acid begins forming in the muscles. The oxidative process goes on—the oxygen versus lactic acid battle continues—and the lactic acid begins getting the upper hand. But, when the muscle is "red-hot," we know that the process of reconverting this lactic acid into glycogen takes place. Is it not clearly indicated that the body should be at "high heat" *when* the gun pops? Very few ordinary runners warm up enough before the race. "Warming up" does not mean "loosening up." It means "heating up"—and heat can be generated only by plenty of hard running. Why should not the runner try to get this so-called "second wind" *before* the race? If he has not tried this, he will be surprised at how quickly he can get "that good old now-let's-go" feeling.

This article has been, in general, for the college runner; it is not entirely applicable to the high school athlete. Let us not forget that young boys are growing boys. We college coaches must remember that our freshmen cannot stand the hard pro-

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF MARCH 3, 1933

Of The Athletic Journal, published monthly except July and August, at Chicago, for October, 1936.

State of Illinois } ss.
County of Cook }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared, who, having been duly sworn according to law, deposes and says that he is the Publisher of The Athletic Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) John L. Griffith, 6858 Glenwood Ave.

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5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is.....(This information is required from daily publications only.)

JOHN L. GRIFFITH.
(Signature of publisher.)

Sworn to and subscribed before me this 22d day of Oct., 1936.

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(My commission expires April 1, 1940.)

gram that the junior or senior can take. High school coaches must bear in mind that the growing boy needs just about all the strength he can acquire for ordinary growth; most assuredly we cannot "work the gizzard" out of growing boys. We must allow them a chance to develop by giving them a good, physically wholesome program of training.

I cannot close without touching upon the subject of "running *and* health"—or, as some would put it, "running *versus* health." A coach should know in his own mind whether the program he has prepared is beneficial or harmful to his pupils. If he is convinced that his program, when followed, is going to pay his pupils dividends in health, he has gone a long way toward making himself a convincing trainer of runners. I suggest that we all dig deeper into the subject of running. It is possible and, I dare say, probable that by so doing we shall be able to view long-distance running in a new light. Let us be convinced in our own hearts that we are giving our boys something really worth while.

Various Types of Defensive Play in Basketball

(Continued from page 22)

balance in the development of the offensive and defensive capabilities of the squad, which is not always so simple as it seems. High scoring teams are frequently lax in their defense, and, conversely, strong defensive teams often win by low scores. The attaining of a proper balance between the two elements is, of course, a coaching function to be applied to the material at hand.

Some mention has already been made of the fact that the type of defense to be encountered ordinarily determines the type of offense to be employed against it. Different defensive styles practically necessitate different offensive methods. Hence a given style of defense must be judged from the standpoint of the type of offense which may be employed against it.

Another aspect in which the interrelation of offense and defense must be taken into consideration is the effect of a team's style of defense upon its own offensive play. For instance, a zone defense lends itself much more naturally to a quick-breaking type of play than does the straight man-to-man. Again, the fact should not be lost sight of that, as will shortly be pointed out, the tempo of the play may be definitely affected by the nature of the particular defense which may be opposed to a given offense. Lastly, the method of attack itself may have a defensive flavor, as where it is designed to pull the opponent's speed men under the basket, thus crippling their fast-break, or where long-shot and fall-back tactics are employed.

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sideration, let us briefly analyze and compare the zone, the straight man-to-man and the checking man-to-man defenses.

Zone Defense

The strong points of the zone defense may be enumerated as follows:

1. It is effective against short shots and pass-and-cut tactics.
2. Its compactness renders it difficult for the offense to open up normal passing lanes, thus necessitating careful maneuvering and accurate passing by the offense.
3. It develops "ball hawks" and the ability to intercept passes.
4. It conserves energy.
5. It is the best formation from which to launch a fast-breaking offensive, if that is the style of offensive play to be stressed; and in such case the energy saved on defense is valuable.
6. It is strong against the screening game.
7. It is strong against "free moving" offenses.
8. It tends to reduce the number of personal fouls.
9. It is especially effective on narrow floors.
10. It is compact from the standpoint of backboard recoveries.
11. It can utilize large men who are not particularly well qualified for or versed in individual defensive technique.
12. It is not difficult to teach or to learn, as the shifting with the ball soon becomes automatic.

The weaknesses of the zone defense are the following:

1. It is weak against side shots and long shots.
2. It loses its mass effectiveness when spread by the offense; in such event the players using it are practically compelled to play man-to-man.
3. If it overshifts, it is weakened on the blind side.
4. If it fails to shift or if it is drawn out, it is weakened at the free throw line.
5. It tends to lead to the neglect of individual defensive fundamentals.
6. It makes impossible the matching of men according to height, speed or scoring ability.
7. It cannot, by forcing, increase the tempo of the opponent's attack.
8. It must be abandoned at the close of a losing game, when the use of man-to-man technique becomes necessary.
9. It makes possible the overloading of one zone by the opposing team; that is, the maneuvering of two offensive men into the territory of one opponent.

Straight Man-to-Man Defense

The straight or assigned man-to-man defense may be said to have the following advantages:

1. It fosters individual responsibility and the desire to out-play the assigned opponent.
2. It makes possible the matching of men with the opponents along lines of speed, height and skill.
3. It is adaptable to any type of offense, and particularly delayed and spread formations.
4. By covering over the floor, when desired, it may be used to increase the tempo of the opponent's offense beyond the capabilities of its players.
5. When opponents have one weak offensive guard, it makes possible the zoning of one defensive man at the free throw line, or his use to "two-time" another offensive player.
6. It develops good individual defensive work, as, by playing against an assigned opponent, the defensive man learns to combat his strong and weak points.
7. It makes necessary the teaching of only one team play element, that of shifting on screen plays. This, of course, does not include play after an opponent's shot.

Among the weaknesses of the straight man-to-man defense may be mentioned the following:

1. It is susceptible to screens, except to the extent they may be protected against by proper shifting.
2. It requires experience and sound fundamental training.
3. It requires more energy than the zone.
4. It results in a tendency to commit more fouls.
5. It results in a tendency to overlook opportunities to intercept passes.
6. It is not conducive to a good fast-break formation.

Checking Defense

The checking defense is in reality a compromise between the zone and the straight man-to-man. It seeks to retain zone mass as far as possible, but at the same time it features individual responsibility once the offensive men have been picked. Against a team operating from a set formation, for instance the conventional two men out and three in, there is no distinction, in reality, between its tactics and those of an assigned man-to-man team. Its advantages are as follows:

1. To a limited extent, it conserves energy, after the manner of the zone.
2. To the same limited extent, it lends itself to a fast-break formation.
3. It is readily expanded to an assigned man-to-man over the floor when necessary, for, after all, it is a man-to-man defense and the players have been trained in its execution.
4. It has individual responsibility, once the opposing players are picked.
5. To the extent that it resembles each of the other two types of defense, it shares their other advantages.

The disadvantages of the checking defense are the following:

1. It makes possible no matching of players as to height, speed or ability.
2. It has a tendency to be weak against

teams using rapidly moving in-and-out tactics.

3. It necessitates extensive combination training in order to avoid the danger of allowing too many men to slip through on the back line.

4. To the extent that it resembles the zone and straight man-to-man, it shares in their other disadvantages.

Attacking the Zone Defense

The basic method of attacking the zone defense combines the use of a spread formation with a rapid passing of the ball from one side of the floor around to the other. This has a tendency to make the defense either overshift, thus leaving the blind side open, or stabilize, thus opening up the area of the free throw line. Good results may be obtained by cutting a guard through to the opposite corner, the other guard moving into the middle of the floor. The center should then pull out from the pivot area to the open corner. This compels the zone either to cover the guard going through man-to-man or else leave him open along the end line. Defensive players will generally follow him. By stabilizing the defense on a 3-2 basis, this maneuver opens up the passing lanes for cross-passes between the forwards, the center going back along the end line as a further threat. The option of a pass to the corner is, of course, also available, and the maneuver will be found to result favorably in opening up the free throw area.

Before we leave this discussion of the zone defense, one paradox mentioned above should be especially noted. Most zone teams are committed to the fast-break. Yet, of all defenses, the zone is the one which is least fitted to force the other team to adopt the fast-break. That can be done only by playing man-to-man all over the court, thus speeding up the tempo of the opponent's offense. Hence we find that the opponents can, if they wish, slow the game down in such a way as greatly to lessen the efficiency of the zone team's fast-break. A good example of this was shown in the Olympic try-outs when Oregon State College played Stanford University, the latter a zone and fast-break team, at Seattle. Oregon State, by careful maneuvering, had the ball most of the first half, and the score at the end of the half was 8 to 7 in Oregon State's favor. The Oregon team finally won the game, a low scoring affair, by about 10 points. An example of the converse situation is afforded by the Rocky Mountain teams, which throw out their defenses at each other with such enthusiasm that combined scores of over 100 points a game are not at all uncommon. Such scores are simply the result of mutually compelled fast-breaking.

Attacking the Man-to-Man Defense

The theories of attacking both types of man-to-man defense are about the same.

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Set formations are generally favored, with a liberal use of screens both around the pivot area and elsewhere. Fast cuts and "pull backs" in conjunction with passes to the pivot man, where one is employed, are used extensively by experienced teams in obtaining open shots. Recent years have seen an increased use of the inside screen in conjunction with side line passes in order to open up a passing lane from the side line to the free throw circle.

A variation of this screen is used to force the side line defensive man in, so as to free his opponent for a set shot. There is also growing in favor the so-called "uncover" screen, the purpose of which is to free the screener for a pass by having him cut for the basket after having set his screen. Other favored methods of attacking man-to-man defenses result from so-called "figure 8" tactics with the use of pick-offs by men in rapid motion to open up the free throw area for shots or quick dribbles into the basket.

Defenses for the Fast-Break

Several matters should be taken into consideration with regard to defense against the fast-break. These involve, first, the possibility of framing an attack so as to draw the opponent's backboard and speed men out of position for their fast-break; second, rebound play designed to secure the ball off the board or, as an alternative, to pin or delay the opponent's backboard men under the basket, thus attacking the fast-break at its source; and, third, the proper method of checking the fast-break once it has attained mid-court.

The first method, that of utilizing the attack as a defensive measure, is quite effective. Let us assume the zone is in 2-3 formation, matching the offensive set-up. The zone's speed or break-away man is on the right wing of the rear line. The zone's tall backboard man plays the middle position in the rear line. The offense works down toward the left wing of the defense. The offensive center breaks out from the free throw area ahead of the play, the backboard man being compelled to shift out with him. The speed man's opponent then breaks toward the free throw line for a pass, thus drawing the speed man into the backboard area and removing him as a fast-break threat. This maneuvering has also opened the blind side of the defense so that cuts by the offensive guard on that side are effective if the ball is passed in to the speed man's opponent at the free throw line.

A method of eliminating the key man of the offense when he is stationed in the front line is to have his opponent cut through to the opposite corner, after the fashion illustrated earlier in this article. The front line man is virtually compelled to follow him man-to-man, so that once again we find that he has been drawn out of position.

As regards backboard play, a common

method of combating the fast-break is to assign the two tallest rebound men to play the follow shots hard, and in the event the guards get the ball off the board to tie them up at once. The other three men should drop back as soon as the shot is taken, their assignment being to plug up each of the three fast-break lanes.

As to the proper method of checking the fast-break once it has passed mid-court, there has been some difference of opinion among the man-to-man coaches concerning when the opponent should be picked. For instance, some coaches advocate picking opponents immediately after the ball is lost. On the other hand, excellent results may be obtained by zoning the back court against the fast-break, first plugging the fast-break lanes as above mentioned. Properly executed, this scheme will cause the offense to stop and pass back to the guards, when the defense may pick its men in the ordinary manner.

In conclusion, while the various types of defense all have their advantages, it is only fair to say that they have their disadvantages as well. The choice of a particular style lies with the individual coach and, as earlier mentioned, this freedom of choice makes for a better, more varied and more attractive game.

Are We Burning Them Up?

(Continued from page 10)

track season? Do you depend upon your personal appraisal and judgment to determine their condition? Would you be willing to pay your doctor for such a diagnosis? Would you expect him to use a stethoscope and all modern tests? Should your boys expect you to use modern tests to check their strength? You have a mechanical means of checking their condition? Their future health depends upon you.

Diet and the Olympic Games

The Olympic games this past summer gave us a good example of staleness, for most of our American distance men seemed stale, improperly trained and lacking in endurance. Cunningham looked good at 1500 meters, while San Romani was the big American surprise, yet neither one seemed to be in a class with Lovelock, the British doctor.

Dr. Cureton has pointed out that the development of endurance is largely a matter of proper foods. Running will not necessarily develop the power of endurance. Since endurance depends upon the development of an alkaline reserve, proper eating is the first consideration of the distance men.

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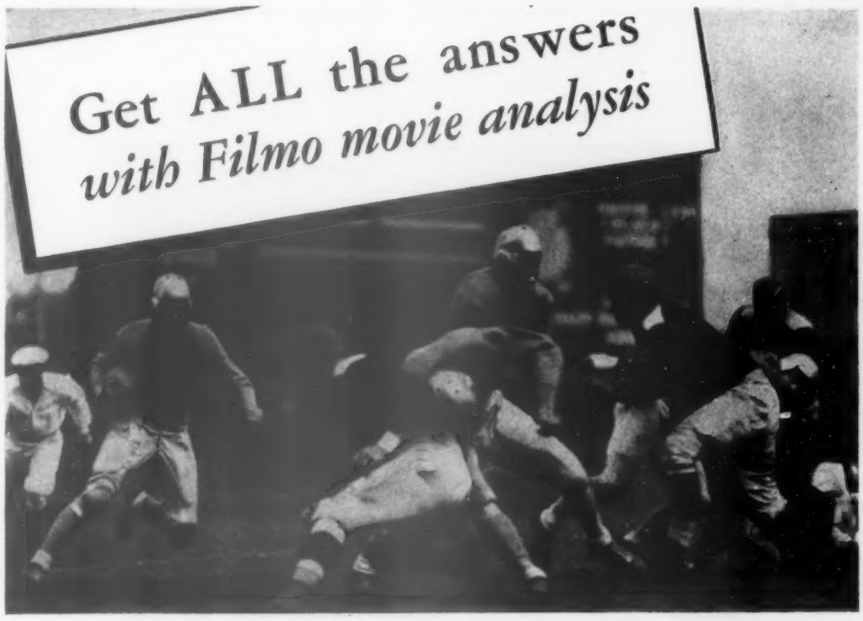

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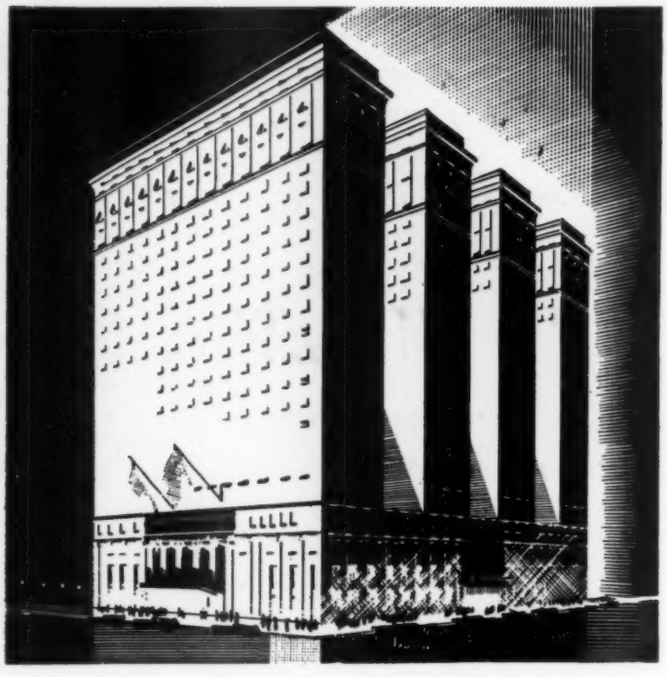

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and could demonstrate their superior endurance qualities at 3,000 meters, 5,000 meters, 10,000 meters or the Marathon. In fact, there was no close second to the Japs and Finns in any of these races.

I predict that, unless we make a drastic change in our training diets, the Finns and Japs will sweep the distance events again in 1940. It is lamentable that the best minds among our country's physical educators could not have been used to train and condition our Olympic team. We have come a long way in scientific training methods, but this team, it seems to me, did not have the full benefit of the latest research findings.

Summary

If you are to keep your track, football or basketball star from going stale, you must keep him at his normal weight. His normal weight is that weight at which he looks best and performs best.

Do not be afraid to tell the track star his time. That is the only way he can learn to judge pace. You would not think of keeping a high jumper uninformed about the height of the bar.

Few young athletes can afford to vary more than two pounds from their normal weight. Staleness is caused in most instances by burning up more energy than the athlete takes in.

A coach cannot control the adolescent's emotional troubles. They just happen.

It is the responsibility of the coach to watch weights and check diets. He must also provide extra energy for those men who run the long races or have to run extra heats. This extra energy can most easily be obtained by using dextrose, an easily digested sugar. Help the boys to maintain a healthy reserve of bodily energy by sensible health practices. Many athletes will go stale this year. Will yours?

Training, Conditioning and the Care of Injuries in Wrestling

(Continued from page 19)

with a disinfectant, and participants should be compelled to wipe their shoes before stepping on the wrestling surface. Cloth mat covers should be washed regularly and swept daily. The rubber cover is by far the more sanitary; however, it is more expensive. Wrestling uniforms should be laundered often to remove dirt and the offensive odor of sweat. Most schools have the splendid arrangement of offering clean equipment daily.

Staleness

Staleness among wrestlers is the result mainly of overwork. Lack of sleep, dissipation and poor food are contributing factors. Usually, staleness is accompanied by

a loss of weight, listlessness, sluggishness and a general feeling of loss of pep and vitality. Continued loss of weight through a season (except in the man who is purposely making a certain weight class) means that the destructive effects of exercise are greater than the constructive effects of food and sleep.

When an athlete has become stale, the only remedy assuring recovery from the condition is to drop all forms of exercise for a week or so until his weight and pep are increased. It is a smart coach or trainer who foresees in time the necessity of cutting from practice the boy who is going stale. After mid-season, an athlete can let up considerably on the length and intensity of his workouts. Limbering up only should be the procedure the day previous to a bout. In the course of time, a coach can judge how much work his men can stand. Some athletes can naturally take more and harder work than others; they should be given extra work until they are in good shape. A long time is usually required to put a wrestler in good physical condition. However, after mid-season, the workouts should be appreciably diminished as a safeguard against staleness.

Injuries and Ailments

Bodily injury to participants in all sports of physical contact has always headed the list of items which prove drawbacks to the success of competition and the well-being of the competitors. Naturally, injury in athletic competition can never be entirely eliminated, but if athletes are kept in good condition, physically and mentally, the chance of injury is greatly lessened. The remainder of this article will include the care of ailments and injuries common in wrestling.

CAULIFLOWER EAR—If the ears are bruised or doubled over under pressure, as a result of head-locks, head-scissors and similar holds, they may become swollen and very painful through the gathering of a pool of blood between the cartilage and the outer layer of skin. A doctor should drain the fluid by the use of a hypodermic needle and then proceed to put more pressure over the ear. This pressure will inhibit the flow of fluids into the space between the cartilage and the outer tissue. Plaster of Paris may be applied in place of pressure. Healing is not helped by allowing the subject to continue wrestling. However, if he has the ear well protected by plaster of Paris and a wrestling headgear, it is very improbable that further injury will result. Much may be done in the way of preventing the onset of cauliflower ears. First, it might be stated that there are two types of ears: those made up of soft cartilage and those of hard cartilage. The "stiff eared" wrestler will usually develop the cauliflower condition more often than the "soft eared" athlete. Vaseline or any ointment may be rubbed on the surfaces of the ears to make them more pliable and offer some degree of immunity to the

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cauliflower condition. Beyond all doubt, the best prevention is the habitual use of an ear protector which has sponge rubber cups fitting snugly over the external ear. The protection thus afforded is beyond criticism.

MAT BURNS—All types of mat burns and abrasions should be taken care of at once, because infection will almost surely result if proper care is not given within a short time. The injury should be washed with alcohol, painted with iodine and an ointment dressing applied. This procedure should be repeated daily until the wound is healed.

INFECTIONS—Because of the close contact of competitors in wrestling, infections in various forms are often prevalent and must be treated as soon as they appear in order to prevent their spread throughout the complete roster. Among these afflictions are impetigo, boils, athlete's foot, gym itch and the common cold.

IMPETIGO—This is a highly contagious pus infection of the skin appearing most prominently on the surface of the face, ears and neck. It is characterized by vesicles, pustules and superficial crusts. One man infected with impetigo may bring about the infection of many other men or all of the team if he is allowed to work out daily. It has been stated before that all mat covers should be cleaned and washed often. The major prevention, however, is to have all skin irritations taken care of by a physician immediately. Anyone who becomes infected should at once be dropped from the squad until his condition has been corrected. The treatment consists of removing the crusts from the irritated area with tincture of green soap. The underlying surface should be cleansed with cotton or gauze saturated with an antiseptic solution such as bichloride solution, boric acid solution or a permanganate of potassium solution. Ammoniated mercury, 10 per cent, should then be applied. The procedure should be repeated twice daily until healing is complete. One beneficial preventive is the daily application of alcohol to the skin after the shower bath.

BOILS—These are another case for the doctor. They are communicable, and any man affected should be dropped from the squad. It is a mistake to permit an athlete who has boils to compete, because contact only irritates the sore area and may spread the boils to other localities of his body. A competent trainer should be able to care for boils if he has the necessary equipment at his disposal.

ATHLETE'S FOOT—This is a skin irritation caused by an organism frequently present in shower rooms. This organism causes ringworm of the feet by attacking the tender skin between the toes. Dead, white, odorous and peeling skin areas result which can develop into open sores. Sandals should be worn to and from the shower room. A daily application of tinc-

ture of benzoin, alcohol or certain commercial products will prevent infection. An epidemic of athlete's foot may easily break out if proper care is not taken to cure those afflicted and to prevent the infection of the healthy.

NOSEBLEED—This is a frequent minor ailment in wrestling resulting from a sharp blow to the nose or head. It is sometimes caused by congested nasal mucous membrane in which exposed capillaries rupture as the result of a blow. The nostrils should be packed with cotton wadding soaked in a solution of ephedrine sulphate or adrenalin chloride, one to one thousand strength. The man should be laid on his back and cold towels applied to his forehead, nose and back of the neck; this treatment will bring about contraction of the capillaries. It may be necessary, because of continual occurrence of nose bleeds, to have a physician cauterize the bleeding areas within the nose.

BRUISES—These occur among wrestlers as a result of personal contact and banging against the mat and floor. They commonly occur on the knee, elbow, shoulder and hip. In fact, any bony protuberance not covered by flesh is vulnerable to injury. A minor hurt of this type may become worse by constant aggravation resulting from continual contact. If this is the case, sponge rubber or any other sort of padding offers some protection. Treatment consists of applying heat, massage and a rub with methyl salicylate ointment.

SPRAINS—May times, a violet jerk or twist when working under pressure results in a sprain. Ankles, fingers, elbows and wrists are the members usually injured. Heat, massage and strapping with adhesive tape are recommended for treatment. In case a finger is sprained, it should be taped to an adjoining finger, which will serve as a splint. Oftentimes the sprain is so severe that hemorrhage results and appears as black and blue markings under the skin. Any serious sprain should be X-rayed to verify the presence or absence of a fracture. Cold applications should be used on a sprain when they can be applied shortly after the injury. Later on, when swelling has set in, hot packs should be applied to reduce the swollen area.

All teams should be under the care of a physician. Many injuries and afflictions accompany all forms of athletics and should be cared for by a doctor. Dislocations and fractures are ever present possibilities in activities involving bodily contact. Cases involving possible fractures should be X-rayed before further exercise is permitted. Dislocations can usually be diagnosed at once by a physician. Oftentimes, as a result of carelessness, an athlete is allowed to work when he possesses a slight fracture. This approaches criminal offense relative to the detrimental results which follow. Care should be taken to handle the injured member very carefully until the doctor has taken charge.

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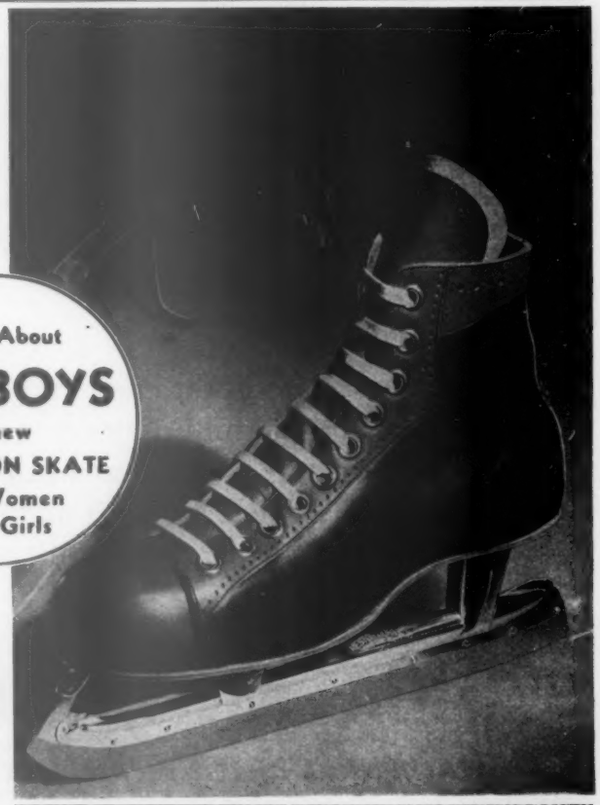

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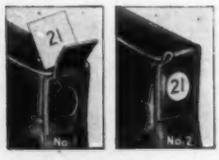

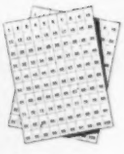

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